

**Strategy Creation and Change in Complexity –
Adaptive and Creative Learning Dynamics in the Firm**



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**Strategy Creation and Change in Complexity –
Adaptive and Creative Learning Dynamics in the Firm**

Patrick Regnér



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To “my families”



PREFACE

This doctoral dissertation is part of the research program in Competition and Strategy (C&S) at the Institute of International Business, IIB. It was written while Patrick Regnér was a doctoral candidate at IIB.

The research was generously founded by The Bank of Sweden Tercentenary Foundation (Riksbankens Jubileumsfond), IMIT – Institute for Management of Innovation and Technology, The Swedish–American Foundation, The CaMiNO Consortium and the "Kråkmarö" sponsor Håkan Ledin. This support is gratefully acknowledged.

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Professor Örjan Sölvell
Director IIB



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Chapter 1

STRATEGY-CREATION – RESEARCH PROBLEM AND OBJECTIVES

1.1 Scope of Research

Contemporary strategic management models appear to contain a striking paradox that has attracted surprisingly little attention. Strategies are assumed to emanate from the centre of firms and from central resources and industry structures. However, a closer examination indicates that peripheral organizational sections and peripheral resources and industries may play a pivotal role in strategy development. An analysis of successful strategies at several Swedish multinational corporations (MNCs) reveals that peripheral sections seem to have been decisive for the strategies while corporate centres opposed them and that in other cases peripheral resources and industries were more important than the existing ones at the centre. The contradiction seems to originate in two fundamental assumptions of strategic management models, in particular strategy-content models.

First, strategies are assumed to emanate from the centre of firms (most often the upper echelons). However, in reality the centre often seem to oppose strategy change and creation, and peripheral sections play the active and primary role. A case in point is the development of the ulcer treatment drug Losec by Astra¹ (Johansson and Vahlne, 1992; Sölvell and Vahlne, 1995; Östholm, 1996). It was developed by a peripheral section of Astra against the will of corporate management, which was skeptical and officially terminated the ulcer project altogether. The project was carried on anyway, and Losec became the most widely sold drug in the world.

A second assumption of strategy-content models is that strategies grow out of prevailing industry and resource structures. Actually, though, factors peripheral to MNCs traditional industry and resource positions often appear to play a more crucial role in the creation of new strategies. The global success of the mobile telephone and

terminal business of Ericsson is an example (Meurling and Jeans, 1997a/b). The business was not built on a particular industry position; rather, Ericsson formed the industry, with little specific or distinctive resources, capabilities or experience in telephone receivers, electronics or consumer goods sectors, apart from experience with military radiotelephony.

Some empirical cases of strategy development in MNCs run counter to both of these fundamental assumptions. In these cases, peripheral actors and sections push strategies in opposition to corporate centres, and industries and resources peripheral to pre-existing ones play a central role in the development of strategy. The paradox referred to above appears to be especially conspicuous, and the assumptions particularly invalid, when foresight horizons are complex, as in strategy development, as opposed to foresight horizons that are clear or merely uncertain. If correct, these observations appear to challenge core elements of strategic management theory. The conception of strategic management, especially as regards complex foresight horizons, as an issue for the centre of corporations and its basis in prevailing industry structures and core resources is thus open to dispute.

1.1.1 Strategy-content Perspectives

The paradox and assumptions discussed above become particularly clear when strategy-making involving strategy development and complex foresight horizons, as in the examples above, is evaluated through the lenses of the two most influential strategic management theories of the last two decades, the industrial-organization view and the resource-based view. These *strategy-content* research approaches, highly influenced by economic theory, have contributed significantly to the development of the strategy field during the last two decades. They have provided two distinct explanations in regard to strategy-making. Strategy theories based on the industrial-organization view (e.g. Porter, 1980, 1981) explain how companies use collusive reductions in competition of various kinds in order to strengthen their positions. In contrast, the resource-based view (e.g. Barney, 1991; Rumelt, 1984; Wernerfelt, 1984) show that firms use their resources and capabilities to build competitive positions. Both approaches have provided extensive arguments and evidence to

¹ Since then merged with British Zeneca to form AstraZeneca.

support their explanations. One provides models based on the firm's position in its industry and has an "outside-in" perspective; the other is based on the firm's resource position and takes an "inside-out" view. They provide two different foundations for explaining and guiding the strategic posture of the firm.

In spite of their impressive theoretical underpinnings, however, these two approaches to strategic management appear not to identify clearly from where and from whom strategy emanates. They appear to focus primarily on competitive maneuvers and entry barriers in a particular industry, or on identifying which company specific resources and capabilities have been predominant, rather than on how these resources and capabilities emerge and how they are discovered. In other words, the more challenging task for these theories, it appears, is to determine how industry and resource positions arise, change and develop over time.

In summary, *strategy-content* theories appear to be less satisfactory in explaining how a specific entry barrier, scale advantage, resource, or competence is identified or created in the first place. Related to this observation is their explicit or implicit view of strategy as consciously controlled and planned in advance from the centre, including a separation of strategy formulation and implementation. This view is in sharp contrast to perspectives that focus on *strategy-process*, which are discussed next.

1.1.2 Strategy-process Perspectives

When the other basic category of strategic management theory, *strategy-process research*, is used for evaluation of strategy-making involving complex foresight horizons and strategy development, the problems discussed are not as apparent, but there are still some uncertainties. Strategy-process research, like strategy-content research, has grown considerably in volume during the last two decades, but it has provided fewer answers and less in terms of theoretical structures. According to the strategy-process theories, strategy is viewed as a collective and adaptive coalignment and as a contextually determined process in which piecemeal strategic decisions are taken based on continuous feedback between formulation and implementation in an emergent pattern over time (e.g. Mintzberg and Waters, 1985; Pettigrew, 1985a, 1987a;

Quinn, 1980). Some strategy process approaches have specifically focused on the management of complexity in strategic management (e.g. Johnson, 1987). A vast range of diverse explanations concerning how organizational systems, managerial systems and other contextual factors influence strategic positions has been offered by strategy-process research. They include emergent and learning views (Bower, 1970; Noda and Bower, 1996; Burgelman, 1983a, 1983b; Mintzberg, 1989; Mintzberg and McHugh, 1985; Mintzberg and Waters, 1985; Quinn, 1980), political and cultural views (e.g. Bower and Doz, 1979; Johnson, 1987, 1992; Pettigrew, 1985a, 1987a; Rhenman, 1973; Stymne, 1974) and cognitive views (e.g. Barr et al., 1992; Hellgren and Melin, 1993; Hodgkinson, 1997; Hodgkinson and Johnson, 1994; Huff, 1990, 1997; Porac et al., 1989; Smircich and Stubbart, 1985; Stein, 1993; Stubbart, 1989). Many of these different views overlap, and there are several configurational (e.g. Miller and Friesen, 1984, Mintzberg and McHugh, 1985, Mintzberg, 1989) and integrative (e.g. Sjöstrand, 1997; Elfring and Volberda, 1999) perspectives synthesizing various views. Some organizational-change perspectives could also be placed in the strategy-process category (e.g. Child, 1972; Miles and Snow, 1978; Pfeffer and Salancik, 1978), although most organizational theory contributions relate more specifically to organizational – environment relationships, but they are frequently used to describe strategic management and as a foundation in strategic management views.

The absence of peripheral actors, resources and industries in strategic management theory is not as manifest in strategy-process views, some of which consider more peripheral sections such as business units, middle management, and management and organizational aspects outside current industry and resource positions. Nevertheless, it appears as if the process views does not identify the ultimate sources of strategy in terms of where and from whom. They seem to be more concerned with implementation problems and obstacles. It seems as if the question *from where* strategy emanates in competitive-positioning terms is often not treated. Similarly, the question *from whom* frequently appears to be overlooked, since the specific managerial role is rarely specified and when it is it is often explicitly or implicitly assumed that top management is at the centre. All in all, the process perspectives seem more applicable than the strategy-content views, and they provide

detailed and convincing descriptions. However, they still do not tell us whether and specifically how managerial actions influence strategy content. Nor, it seems, do they fully explore the ultimate origins of strategy and the specific mechanisms of change in strategy content. The substance of strategy often appears to be more or less left out; strategy process does not sufficiently relate to strategy content.

In other words, even if the strategy-process approach provides more as regards strategy-making involving complex foresight horizons and the development of strategy, it does not seem to offer an entirely sufficient framework. While the strategy-process field is vast and diverse and in many instances general enough for sections of it to cover aspects of the problems highlighted here, there seems to be no comprehensive and common explanation for them, even if there is process research that refer to these issues and cover related conditions (e.g. Bower, 1974; Burgelman, 1983a, 1983b; Doz and Prahalad, 1987; Johnson, 1987; Noda and Bower, 1996). The main difficulty, as noted above, seems to be that many strategy-process views do not relate sufficiently to strategy content. The lack of connection between strategy-process and strategy-content research has contributed to the insufficient understanding of strategy-making involving complex foresight horizons and to the confusion about *from where* and *from whom* strategy emanates. In addition, the fact that the two schools do not relate to each other is closely associated with the fragmented character of strategic management research and theories. This subject is discussed next.

1.2 Strategic Management Theory – Multiparadigmatic and Fragmented

Strategic management is a multiparadigmatic field. It encompasses economics, organizational theory, psychology, political science, as well as other areas and, thus, includes many diverse theories, including those of industrial organization, transaction cost and evolutionary economics, as well as cognitive theory, contingency theory, and behavioural decision theory. While there is a wide range of strategy schools, the fundamental demarcation line lies between strategy-content and strategy-process research, as outlined above. The former is based on economics, while the latter is founded mostly on other behavioural sciences. The two differ in terms of

methodology, with the former following a positivist tradition and the latter using more diverse methods, including more interpretive ones. As implied, there are substantial controversies between the two strategic-management schools, but there are also disagreements within each. The basic disputes concern the character of the strategy process, planning versus more emergent views or rational vs. boundedly rational views (e.g. Ansoff, 1991 vs. Mintzberg, 1990a, 1991). Within strategy-content research the main battle is between those emphasizing industry structure and those focusing on firm resource structure as decisive for explaining profitability (e.g. Porter, 1981 vs. Barney, 1991). Strategy-process research has produced many alternative views and debates; one central debate has concerned whether the fundamental character of strategic change is revolutionary or evolutionary (e.g. Mintzberg, 1978 vs. Quinn, 1980).

Besides these differences, the normative output of strategic management research is widely debated and questioned. Much of this research ultimately aims at developing normative theories to be used in the practice of strategy in order to obtain higher returns. Many strategic management scholars, especially those with a strategy-content perspective, interpret their field as inherently normative (e.g. Teece et al., 1997; Winter, 1987), while others, primarily within strategy process focused research, stress description (cf. Mintzberg, 1990b). Normative output is debated on the same grounds as its theoretical foundations, but those practising strategic management also criticize it. Managers argue that the normative advice provided is too theoretical and esoteric and not relevant given their rapidly changing and dynamic environments. Another criticism concerns the growing prevalence of strategy and management fads, their sudden rise and fall and conflicting character (Micklethwait and Wooldridge, 1996). The multiparadigmatic nature of strategy, and the lack of agreement among scholars in the field, especially in regard to the strategy process, have previously been observed and are demonstrated by the diverse range of strategy schools presented in strategic management reviews and strategic management overviews of different strategy forms (e.g. Chaffee 1985; Eisenhardt and Zbaracki, 1992; Johnson 1987; Mintzberg 1973b, 1987, 1990b; Mintzberg et al., 1998, Spångberg 1982; Smircich and Stubbart, 1985; Whittington, 1993).

1.2.1 A Framework for Strategic Management Perspectives

Despite the lack of agreement on definitions in relation to strategy, as well as on strategy theory and its normative conclusions, most strategic management perspectives address two fundamental questions of strategy: "*where to go*" and "*how to get there*." These questions have been examined and discussed in terms of strategy content as well as strategy process .

Where to go refers to where the firm should move, what competitive position the firm ought to have. In *strategy-content* terms the focus is primarily on positioning the firm versus competitors within an industry. In terms of *strategy process*, the emphasis is on finding an appropriate strategic position via strategic analysis and planning.

How to get there, on the other hand, concerns how the firm should reach a certain strategic position. For purposes of *strategy content*, this question relates to building positions where the firm has unique skills and capabilities. In *strategy-process* terms the question relates to developing strategy through various emergent actions. This division of strategic management theory into *strategy content* and *process* and the two fundamental questions of strategy - *where to go* and *how to get there* - provides a convenient structure for a categorization of strategic management perspectives and theories. It is summarized in Figure 1.1 below. In regard to strategy content, the overview relates to *industrial organization (IO)* and *resource-based views (RBV)*; in regard to strategy process, it includes deliberate strategic-planning, or *strategy-formulation* views, and context dependent emergent, or *strategy formation*, perspectives. Please note that strategy process in this classification and in the figure below refers to the characterization of strategy process as such and not to the strategy-process research field . In this respect the classification follows Mintzberg's (1990b) and Mintzberg et al.'s (1998) denotation of process character and does not solely refer to emergent views of strategy. Clearly, the four areas are not independent and mutually exclusive. Their interaction and relationship is part of the focus of this study.

	<i>Where to go?</i>	<i>How to get there?</i>
<i>Content</i>	<i>IO based views</i>	<i>Resource based views</i>
<i>Process</i>	<i>Strategy Formulation views</i>	<i>Strategy Formation views</i>

Figure 1.1: An overview of four major areas of strategic management .

The separate designation of the four areas outlined above is being continuously reinforced by controversies among them and disputes about their normative findings. These debates could stimulate and foster further development of the field. At the same time, however, it appears that because of the sharp division and basic disagreements among the different areas, essential questions in the field of strategy have not been addressed. There is an inherent risk of fragmentation given the multiparadigmatic character of strategic management theory. Issues that fall different areas of the field, and relationships between them, tend to be neglected . One such issue is at the centre of this study.

1.3 Research Focus

1.3.1 The Centre of the Study – Strategy Creation

The brief discussion of strategic management theory above has provided neither a comprehensive review nor a proper evaluation of strategy-content and -process theories. The task of evaluating contemporary theories of strategic management more thoroughly is left as an objective of this study, which aims at complementing strategic management theory. The purpose of the discussion above was solely to highlight a notable paradox in strategic management models which seems to have been overlooked. The paradox is based on two fundamental assumptions which often run counter to fact. Firstly, while strategies are assumed in existing theories to emanate from the centre of firms, the centre in reality often opposes strategy change and creation. Secondly, while strategies are assumed to grow out of prevailing industry

and resource structures, peripheral and external factors often seem to play a more crucial role. Both assumptions seem to be particularly questionable in regard to strategy-making involving complex foresight horizons and strategy development. It appears as if this group of strategic issues cuts across the various approaches to strategy outlined above and is not conveniently captured within any one of them. The traditional division and separation between the various perspectives appears to be more appropriate when foresight horizons and industry and resource positions are reasonably clear. Once foresight horizons and industry and resource positioning become complex, as in the generation and development of strategy, the division between strategy content and process and between the two fundamental questions of strategy, *where to go* and *how to get there*, seems to break down. So do the distinctions between the different approaches to strategic management areas, industry versus resource positions and formulation versus formation. The two examples referred to in the introductory paragraph (Astra's powerful anti-ulcer drug Losec and the global success of Ericsson's terminals and telephones) both involved complex foresight horizons and the creation of new industry and resource positions. Complex foresight horizons are particularly manifest in these types of circumstances, involving the creation of new strategies in terms of new products, markets, and distribution forms, and in other ways.

The paradox and the brief discussion above indicate that significant areas of strategic management research might not have addressed certain important strategic management issues. The phenomenon of strategy-making with complex foresight horizons, and particularly in the development of strategy, appears to be such an issue. Schumpeter's (1942, p.84) remark regarding the traditional analysis of capitalism could be rephrased at the level of the firm and strategic management: *The problem that is usually visualized is how strategic management in firms administers existing structures, whereas the relevant problem is how it creates and destroys them.* Accordingly, the empirical base of inquiry in this study is *strategy creation, the development and generation of new strategic positions*. Strategy-creation essentially concerns Schumpeter's (1934) fundamental concept of competition and economic change, and is therefore broadly defined as the entry into new businesses and discovery or development of new industry and resource positions. It refers to various

broad cases of "carrying out new combinations" such as new products, techniques and practices (Schumpeter, 1934, p. 66; new goods, production methods, markets, ways of industry organization).

Since the diverse and separate strategic management areas outlined above seem to be interwoven in regard to strategy-making with complex foresight horizons and the phenomenon of strategy-creation, they have not been thoroughly examined or defined. Accordingly, little empirical study specifically focused on strategy-creation has been done in either strategy-content or strategy-process research. It was observed in the brief overview provided above that although considerable research has been focused on strategy content in terms of specific industry and resource structures, less attention has been given to how these arise in the first place. Similarly, it was noted that while much process research has examined contextual and constraining factors and strategy implementation obstacles, less study has been done on specific managerial and organizational practices and mechanisms determining the origins of and connection to new industry and resource positions. In brief, little empirical research has been specifically geared to examining where and by whom strategy is created, as previously noted in the presentation of the paradox.

Even though little empirical data has been generated on strategy creation, the development of new products and businesses is often emphasized as important in strategic management. This discrepancy can be explained by the observation that much of the empirical research has been left to research on product and production innovation (e.g. Tushman and Moore, 1988). This research is primarily focused on technology-based innovation, while the more general phenomenon of strategy-creation is incompletely documented. It is acknowledged that strategy-creation often involves technological innovations, but the managerial and organizational considerations in strategic management terms concerning the long-run development of the corporation as a whole have seldom been considered. It does not seem advisable to transfer and borrow all concepts applied to the more specific phenomenon of innovation and R&D management, since pre-conceived notions and *a priori* conceptualizations regarding these phenomena might conceal important aspects of the more general strategic and corporate-wide phenomenon of strategy-creation (cf.

Burgelman, 1980). There seems to be a need for an analysis of strategy-creation focused on more general strategic considerations, implications and practices, beyond the management of technological innovation. The general management of strategy-creation and the managerial and organizational practices involved in that endeavour require attention. In particular, the practice of strategic management, how strategies actually are created and influenced by managers, needs to be evaluated.

1.3.2 Strategic Management Practice – A Behavioural and Knowledge Perspective

The fact that the two main fields of strategic management, strategy content and process, do not seem sufficiently interconnected appears to have excluded strategic management practice from some analyses of strategic management. Strategy-content research is mostly concerned with formal analyses, optimization exercises and strategic plans. These activities are part of strategic-management practice, but the process aspects are entirely absent, as extensively demonstrated by several studies referred to above (e.g. Mintzberg and Waters, 1985; Johnson, 1987; Pettigrew, 1985a, 1987a; Quinn, 1980). Strategy-process studies, on the other hand, explicitly describe strategic-management practice and sometimes even emphasize the combination of analytical and intuitive aspects (Mintzberg, 1976; 1989), but they often seem to leave out the final managerial connection to strategy content. Some strategy-process views stress the relationship to strategy content (cf. Pettigrew, 1985b, 1987b), but the specific definition of that connection and the managerial practices involved appear to remain indeterminate. Contextual influences and accidental factors play an important role in strategic management, as extensively described in the strategy-process approach, but the question is what role managers and firms play and what specific actions they take to realize strategy. After all, strategy content *is* generated in spite of all the contextual influences, and it does not seem as if strategy-process and organizational-theory research has accumulated enough evidence to establish that strategy content is attributable solely to accidental factors. In-depth observations of managerial work (e.g. Carlson, 1951; Kotter, 1982; Mintzberg, 1973) show that managers take action, inform themselves and others, make decisions and form

strategies, despite contextual constraints. The relationship between the day-to-day actions that give strategy content is still, however, indeterminate and needs to be captured. It may be that strategy-process research, influenced by and partly embodied in organizational theory, underestimates managerial factors. Notably, Child's (1972) observation that organizations make decisions received much attention in organizational theory, while it is hardly surprising from a strategic-management perspective (Mintzberg, 1990b). It appears as if "what managers do" in terms of strategic management and strategy-creation often remains as a residue. If the question is addressed at all, the answer is frequently ascribed to artistic, intuitive or vague leadership competencies. The actual conduct of strategic management as a form of art or some undetermined tacit component is present in strategy-content as well in strategy-process writings. The CEO or top executives are considered as "architects" (Andrews, 1980a), with the formulation of strategy as a "creative act" (Christensen et al., 1982), or they are "craftsmen" (Mintzberg, 1975), and the creation of strategy is to "craft thought and action" (Mintzberg, 1989). In other words, the actual generation of strategies from a managerial standpoint is often ambiguous in strategic management research.

These observations about the strategic theory of the firm are related to the fact that this theory has yet to establish "what entrepreneurs do". There is no entrepreneurial theory of the firm (Rumelt, 1987). Rather, the theory of the firm is solely based on transaction costs (Coase, 1937; Williamson, 1975, 1985), even if substantial contributions have been presented in research on entrepreneurship (Schumpeter, 1934, 1947; Knight, 1921; Kirzner, 1973; von Mises, 1949).

An alternative, knowledge-based theory of the firm presented recently (Kogut and Zander, 1992, 1996, Grant 1996, Zander and Kogut, 1995) suggests basically that firms are better than markets at sharing and transferring knowledge. It determines tacit organizational factors and focuses specifically on what organizations and individuals and groupings within firms do. This view comes closer to recognizing a role for managers in strategic management and strategy creation.

The focus in the present study is on strategic management practice and the entrepreneurial role of the firm - what managers, entrepreneurs and managerial groupings do to create strategy. This approach is associated with an analysis of how

firms create, coordinate, combine and transform knowledge, something which might provide a contribution in an accompanying "strategic or entrepreneurial theory of the firm". In sum, the focus in this study is on the practice of strategic management; the study may thus be expected to provide information bearing on strategic management theory as well as the theory of the firm.

In contrast to the prior lack of focus on strategy creation, the topic has attracted a great deal of attention lately in terms of theoretical and conceptual examinations of sources and methods of wealth creation (Teece, Pisano and Shuen, 1997; Moran and Ghoshal, 1999) and strategy and strategic innovation (Baden-Fuller and Stopford, 1992; Hamel, 1998; Markides, 1997), even if empirical studies are still absent. Compared to those writings, the present study has an empirical focus and approaches the question of strategy-creation from a perspective of strategic management practice - one that is more behavioural and process-based - rather than from an economics-based perspective of strategy content (Teece, Pisano and Shuen, 1997), entirely conceptual (Moran and Ghoshal, 1999) or a normative (Hamel, 1998; Markides, 1997) perspective .

This choice of perspective also has implications for the approach in terms of method, which is consequently based on in-depth longitudinal case studies, to be further discussed in the next section. A behavioural and process approach appears to be appropriate, since strategy creation, or "carrying out new combinations," ultimately concerns assimilation and integration of knowledge. As concluded by Rumelt, Schendel and Teece (1991, p.27) in an essay on the relationship between economics and strategic management: "Where the coordination and accumulation of knowledge is key, and where patterns of belief and attitude are important, other disciplines will have more to say".

1.3.3 MNCs – the Empirical Base

Research on the modern MNC has emphasized and called for more research based on managerial perspectives (Bartlett and Ghoshal, 1991, 1993). So does the present empirical investigation of strategy creation, since it is focused on MNCs and specifically emphasizes strategic management practice. Contributing to the focus on MNCs is their association with turbulent contexts and rapid economic change, which

requires strategy creation. Accordingly, MNCs are primary instruments for strategy creation, and innovation capabilities have played an important role in models of the modern MNC (Bartlett and Ghoshal, 1989; Doz, 1986; Hedlund, 1986). Much research in this field has taken organizational form and structure as the point of departure (e.g. Ghoshal and Nohria, 1993; Hedlund, 1994; Nohria and Ghoshal, 1994), while relatively less has been specifically geared towards empirical study of strategic management and its practice from a strategy-theory point of view.

The empirical base in this dissertation consists of case studies of MNCs. The focus is on strategy-creation and strategic management practice in order to develop strategic management theory. The cases studied involve a wide variety of circumstances in which strategy is created, according to the definition of strategy-creation delineated above. They include strategy-creation events of crucial importance for the profitable long-term survival of four large MNCs.

Both factors mentioned in the beginning are identifiable: Peripheral actors and sections drive the development of strategies in spite of opposition from corporate centres, and factors peripheral and external to pre-existing industry and resource structures play a central role in the development of strategy. The cases of strategy-creation include Couplet's entry into non-mechanical systems (electro mechanical systems and electro hydraulic systems) and the development of a trailer surveillance and control business, Ericsson's entry into mobile telephony communications systems and creation of a mobile telephony business, Pharmacia & Upjohn's entry into smoking-cessation products and creation of a consumer health care business, and AGA's entry into Eastern Europe and creation of an Eastern European industrial gas business.

1.4 Delimitations

The definition of strategy-creation as the entry and development process into new businesses in terms of new products, markets, techniques and practices might appear to delimit the study to corporate strategy as defined in the traditional dichotomy between corporate strategy (i.e. what businesses to be in) and business strategy (i.e. how to compete in each business). However, this fundamental division referred to in

many textbooks and other strategic management literature (e.g. Barney, 1997; Goold et al., 1994; Hamermesh, 1986; Johnson and Scholes, 1997) is not clear-cut, and the two types of strategy are closely linked (Grant, 1997). The separation makes sense in a conceptual and planning setting, for example in terms of an explicit diversification decision. The distinction between the two types of strategy becomes blurred, though, when strategic management practice, implementation and process are brought in (cf. Burgelman, 1983b). Consequently, the division does not appear wholly appropriate for strategy-creation, since it specifically involves complex foresight horizons where the separation between competition within an individual business and the entry into new businesses is not as distinct. It is problematic to describe strategy-creation in terms of the traditional corporate and business strategy concepts. This statement is consistent with the previous observation that strategy-creation is not considered in several strategic management areas. However, there is a distinction in terms of the strategy-creation process triggering strategic change and corporate strategic change itself. The main focus of the study is on the strategy-creation development process leading up to strategic change and not on the final corporate strategic change as such. It is acknowledged, nevertheless, that these are not independent topics and their connection will also be examined and discussed. In brief, the focus of the study is not limited to corporate strategy, but includes business strategy as well. In fact, strategy-creation almost appears to be a separate category of strategy, a definition problem that will be examined as the study continues.

The focus on strategy creation, as defined above, calls for a more extensive and fundamental inquiry compared to investigations of technology development, R&D management and the management of the interface between these activities and manufacturing/operations and marketing. Thus, the focus is not specifically on intracorporate venture sections (e.g. Burgelman, 1983b), "skunkworks" (e.g. Peters, 1983) or other corporate R&D or new venture units. In this sense it follows Rumelt's (1987) recommendation to extend the focus beyond technological invention in studies of entrepreneurial innovation and strategy. Entrepreneurship becomes important in this respect, since the creation of new strategies and businesses is often defined in entrepreneurial terms (e.g. Rumelt, 1987). It is not, however, a study of entrepreneurs and does not specifically investigate the characteristics of entrepreneurial origin,

conduct or motivation. Although knowledge and learning are important aspects in the investigation, as outlined above, it does not examine specifically entrepreneurial or other individual social psychological or cognitive factors. In terms of cognitive factors on the organizational level the point of departure is a recognition of a cognitive consensus on the organizational level, in accordance with many studies and theories in the social sciences, organization theory and strategic management (Axelrod, 1976, Bateson, 1972; Cyert and March, 1963; Daft and Weick, 1984; Hedberg, 1981; Lyles and Schwenk, 1992; Johnson, 1987, 1992; Levitt and March, 1988; Spender, 1989; Winter, 1987, 1982).

A final delimitation is a focus on strategy rather than structure in Chandler's terminology (1962, 1990). Hence, even if internal organizational strategy creation processes are in focus the main emphasis is on strategy rather than organizational structures and forms and their connection to strategy. However, since these are interconnected factors and the internal location of managers within the firm might have an influence on strategy development they can not be treated as entirely independent. In addition, since several organizational change models describe organizational behavior versus the environment and as they are used as a base in various strategy perspectives they need to be considered.

In sum, the study focuses on strategy creation, defined broadly rather than merely in terms of innovation processes concerning industrial products and production, and it concerns more general aspects of strategic management than entrepreneurial behaviour alone. It emphasizes knowledge and learning, but does not investigate individual social psychological or cognitive factors in detail. The study is on "strategy creation" rather than "strategy innovation," thus adopting a focus different from one on technological and entrepreneurial innovation. Finally, the main focus is on strategy development as such and less on its connection to organizational structures.

1.5 Normative Considerations

While the primary purpose of the present study is not to develop normative models or advice for strategy-creation or strategic management, normative considerations related

to strategy-creation do provide an important additional reason for studying the phenomenon. This consideration accentuates yet another, and perhaps even more serious, dilemma and paradox in strategic management – in reality many strategic management models and their normative output seem unable to handle complex foresight horizons and strategy derivation and growth.

As noted above, strategic management is often considered as inherently normative. Strategic management theorists with normative ambitions want to develop a theory that can clarify the conditions for long-term competitive success and that hopefully can ultimately generate such success. Accordingly, most strategic management theories claim to focus on strategy development and factors that matter in the long run; in fact, strategic management is often defined in those terms. In reality, however, these theories seem incapable of handling complex foresight horizons and strategy creation. The brief overview above indicated that strategy-content perspectives appear unable to show how industry and resource positions arise, change and develop over time, and that strategy-process perspectives mostly provide descriptions of present or past strategies. If these observations are correct, both views are essentially *ex post* perspectives. From a normative standpoint this situation is quite challenging - while successful strategies may be described, the explanation for their success is not determined.

This problem has attracted the attention as regards both strategy-process (Schendel, 1992a) and strategy-content research (Hamel and Prahalad, 1994). The observation above that strategies might develop outside and in opposition from the center complicates matters further. Paradoxically, strategic management theories seem to provide models and normative advice on the basis of historical strategies to managers not in charge of strategy. This comment, while somewhat provocative, highlights some of the core challenges of strategy-creation, if not of strategic management in general.

1.6 Initial Research Questions and Purpose

The relevance of the paradox and the problematic assumptions debated above is that they appear to challenge essential elements of strategy-content theories: their focus on

industry structures and core resources, and their explicit or implicit conception of strategy as an issue for the centre of corporations. Strategy-process theories are likewise challenged, since most of these seem inconclusive about where and from whom strategy originates, and about the specific mechanisms of change in strategy content. Both schools of research seem primarily to include descriptions and analyses of historic and prevailing strategies rather than of how firms achieve competitive industry and resource positions in the first place. The problems observed raise fundamental questions regarding strategic management, cutting across the four separate conceptual areas discussed and outlined in Figure 1:1 above. The paradoxes and accompanying challenges are especially apparent in the cases of complex foresight horizons and strategy creation. There simply seems to be no adequate model for these significant areas of strategy .

The objective of the present study is to examine these paradoxes and the questions of strategy-making with complex foresight horizons and strategy creation. The paradoxes raise several important questions for strategic management theory: What distinguishes complex foresight horizons and strategy-creation from other strategic management questions? Why has strategic management research failed to capture these phenomena? Where does strategy originate, if not from prevailing industry and resource positions? Why might corporate centres not take the lead in strategy creation? These questions will be addressed in the study. The general purpose is to *describe and examine how multinational companies develop and manage strategy-creation and to submit a proposal for a theory of strategy creation.*

Based on the findings of a pilot study, the purpose is further specified in the next chapter, which is centred on strategic management practice and the first question mentioned above: what distinguishes strategy-making involving complex foresight horizons and strategy-creation from other aspects of strategy-making. That chapter ends with an agenda for the continuation of the study and a specification of the purpose in terms of a set of four interrelated sub-purposes: firstly, to evaluate the status of contemporary strategic management theories in regard to strategy-creation and strategy in the case of complex foresight horizons; secondly, in descriptive terms, to determine the form and character of strategy creation; thirdly, in exploratory terms, to identify and better understand origins and drivers, as well as the barriers, in regard

to strategy creation; and fourthly, in more explanatory terms, to provide a tentative theory of the relationship between strategy process and strategy content in strategy creation.

Arguably it is unreasonable to expect strategic management theory to explain strategy-creation and strategy-making involving complex foresight horizons, and where and from whom strategy emanates. In that case the ambition of the present study would be too high. At the same time, however, the description and explanation of how entirely new industry and resource positions are created and how to conduct long-term strategy-making in the face of complex foresight horizons are important - if not pivotal - issues in strategic management. Also central is the determination of where and from whom strategy emanates. Moreover, as outlined in this introductory chapter, it appears as if all these aspects are related and need to be examined together in a first exploratory attempt to determine whether it is possible to make any generalizations at all about strategy-creation. A complete clarification and explanation of strategy-creation would appear to be far beyond the scope of this study, but descriptions and explanations regarding where and from whom strategy originates, the managerial practices involved, the underlying logic, and related issues do not seem to be unattainable. Consequently, at least the possibility of making generalizations needs to be explored. In this respect it appears as if knowledge regarding strategy-creation has made no major advances since Schumpeter's days. His comment in encouraging further research on creative responses to economic change and on entrepreneurship is illustrative and still appears to be relevant: "We do not know enough in order to form valid generalizations or even enough to be sure whether there are any generalizations to be made" (Schumpeter, 1947, p. 231).

1.7 Expected Contributions

The present study is primarily expected to contribute to strategic management theory and in particular to a theory of strategy development and creation. As noted earlier, few studies have explicitly examined strategy-creation empirically and investigated the process – content relationship regarding that phenomenon in particular. It is predicted that the study will contribute to determining the characteristics of strategy-

creation in terms of its origins, drivers and barriers. The findings are most likely to provide knowledge on the link between specific managerial practices and organizational processes, on the one hand, and the creation of new strategies and strategy content, on the other.

Since the focus is on determining the managerial and organizational mechanisms which assist in the shaping and development of new strategies, the contribution of this study relates to recent efforts from the strategy-content school of strategic management theory to identify these kinds of mechanisms (Teece et al., 1997). The present study has a similar goal, but from a strategy-process perspective. It is anticipated that the findings will contribute to a more dynamic perspective on strategy-content and will advance strategy-process research by more specifically identifying managerial and organizational influences on strategy content. If these expectations are met, it might also be possible to outline a more integrated view of strategy content and process.

The strategic theory of the firm is closely connected to the more general theory of the firm; it is therefore conceivable that the findings may also contribute to that theory and clarify some of its parts. The study is expected to help establish how firms create, coordinate and transform knowledge, with possible implications for the theory of the firm. More specifically, it might shed some light on why the creation of new businesses, or the "carrying out of new combinations," is managed better within a single firm than on the market by several different specialized firms. In brief, the study might help to explain why firms are created in the first place and what capabilities are involved.

While the MNC was not chosen as an empirical base primarily to provide implications for international management research and management of the MNC, the study is predicted to contribute to that field of research more indirectly. The ability of MNCs to innovate and renew themselves has been at the centre of that current of research in recent years. The study provides a detailed description and review of strategy-creation at several highly internationalized MNCs. It could therefore assist in explaining the mechanisms of renewal and innovation in MNCs and possibly also provide some indications as to how to manage and organize the MNC in order to promote those capabilities. This last normative aspect, however, is not a major

objective of the study, which is not specifically designated to provide normative advice. On the other hand, strategic management is indisputably associated with that aspect, and the conclusions are expected to be normatively interpreted. However, the findings are not likely to provide any definite normative conclusions about the specific phenomenon of strategy creation. As indicated earlier, such inferences cannot realistically be drawn in advance. The study might contribute more generally to outlining which broad managerial and organizational conditions can indirectly provide for strategy creation.

To conclude, the study is primarily expected to contribute to determining the characteristics of strategy-creation, the strategy-process/strategy-content relationship regarding that phenomenon and the managerial and organizational processes involved in it. This knowledge might shed further light on other forms of strategy-making involving complex foresight horizons, and on strategic management more generally. In addition, the conclusions are expected to provide information for research on the theory of the firm and in international management.

1.8 An Overview and Preview of the Study

The study is divided into four main parts. *Part One* contains chapters one through three and examines the phenomenon of strategy-creation more generally. The scope of the research is explained, and the concept of strategy-creation is introduced. In addition, the section comprises an outline of the methodology, which is based on a dual method involving a single in-depth case study and a multiple retrospective one. *Part Two* focuses on the single in-depth study and an evaluation of strategic management theories in relation to the phenomenon of strategy-creation. It incorporates chapters four through six. The multiple retrospective study is at the centre of *Part Three* (chapters seven through ten). Origins and drivers of strategy-creation, and barriers to it, are carefully examined in terms of various learning dynamics. Finally, *Part Four* (chapters 11 and 12) comprises a summary and the results of the study. Conclusions and implications for strategic management theory are provided together with a model of strategy creation. Implications for the theory of the firm and international management research are outlined. In addition, alternative

strategy models, normative suggestions and avenues for future research are proposed. Below is an overview of the structure and a preview of the contents of each chapter.

1.8.1 Part One

This *introductory chapter* has established the research territory and briefly reviewed various sections of strategic management research. In particular, some paradoxes in strategic management have been emphasized and discussed, and areas where further research is needed have been outlined. In brief, the focus of inquiry and nature of the present research were set forth and positioned in relation to prior theories.

Chapter Two turns to the practice of strategy and investigates the nature of strategy-making. It focuses on the relevance of strategic management theories and their normative advice. While the inquiry generally concerns strategic management practice, it specifically focuses on what distinguishes complex foresight horizons and strategy-creation from other strategic management questions. The discussion centres on a pilot study which examines strategic management issues and practices in Scanmeck Couplet (later Couplet). Strategy-creation is found to have a fundamentally different character than other strategic management considerations. In particular, strategy content and process appear to be inseparable in an analysis of strategy creation. The chapter concludes by framing a set of more specific and refined research questions. The focus remains on the characteristics of strategy-creation and its treatment in strategic management theories. The objective is to identify origins and drivers of strategy-creation and barriers to it, and to review the theory on that topic. In particular, the aim is to elucidate the relationship between strategy content and strategy process. Besides formulating the research questions, the chapter is intended to provide a better understanding of different categories of strategic issues and the character of complex foresight horizons and strategy creation. The pilot phase also influenced the choice of subsequent methodology, which is discussed in the following chapter.

Chapter Three discusses the research design and the approach followed in the investigation of strategy-creation and the relationships between strategy content and strategy process. The chapter describes the research process and its two principal

phases, a pilot study and a subsequent main phase. The methodological specifics regarding the first phase are reported in Chapter Two in conjunction with the pilot study. Based on the results of the first phase, which sets forth the research questions and the purposes of the research, a dual qualitative methodology, including a single in-depth case study and multiple retrospective one, is chosen for the second phase. The reasons for choosing this specific method are outlined, and particular methodological considerations such as selection procedures, unit of analysis and causality are discussed.

1.8.2 Part Two

Chapter Four contains a description and analysis of the single in-depth study. It includes a close examination of the strategy-creation process concerning Couplet's entry into the business of non-mechanical coupling systems, how the company developed these systems and how it became a full-fledged trailer surveillance systems company. Strategy-content as well as strategy-process aspects are investigated, and the particular character of strategy-creation and strategy-making with complex foresight horizons is further examined. From the empirical findings, an initial conceptual framework is constructed and preliminary conclusions drawn. In the following chapters, strategic management theories are thoroughly evaluated, both in relation to strategy-creation in general and in relation to the case of Couplet and its strategy for non-mechanical coupling systems in particular.

Chapter Five examines strategy-content theories in terms of industrial organization and resource-based views. In order to provide a framework for an evaluation, a short overview of the two strategy schools is provided. Resource-based views are discussed more in depth, since they dominate the contemporary strategic management debate and relate more closely to strategy creation. The two theoretical frameworks are discussed as regards strategy-creation and the Couplet case described in the prior chapter. It is concluded that strategy-content theories in many respects essentially neither describe nor explain strategy-creation and that they disregard the link to strategy process. Their insufficiency as regards strategy-creation seems to lie

primarily in their preoccupation with historic and prevailing industry and resource positions.

In *Chapter Six* the examination of strategic management theories is continued with a focus on strategy-process perspectives. Various theories of strategy process and organizational change are discussed and evaluated in relation to strategy-creation and specifically to Couplet's entry into and development of non-mechanical systems and trailer surveillance systems. It turns out that strategy-process perspectives provide thorough descriptions and evaluations of strategy processes, but appear to be indeterminate as regards strategy-creation and strategy-making with complex foresight horizons and regarding the detailed mechanisms of strategy creation. In sum, the two major directions of strategy content and strategy process appear not to entirely cover strategy-creation and strategy-process – strategy-content relationships. It seems as they need to be complemented regarding this area.

1.8.3 Part Three

The multiple retrospective case study is presented in *Chapter Seven*. It includes a thorough descriptions of the companies, industries and strategy-creation processes studied. Three cases of strategy-creation are examined: Ericsson's entry into mobile telephony communications systems and creation of a mobile telephony business, Pharmacia & Upjohn's entry into smoking-cessation products and creation of a consumer health care business, and AGA's entry into Eastern Europe and creation of an Eastern European industrial gas business. An evaluation and analysis follow the description of each case of strategy creation. The preliminary conclusions from the single in-depth study are confirmed, and the conceptual framework of constructs are extended. Two completely different strategy motors are identified in each case, as are two fundamentally different logics of strategic management. It is also found that various forms of learning dynamics appear to play an important role in framing and generating the strategies.

Chapter Eight evaluates strategic management theory and the relationship between strategy content and strategy process in relation to the single in-depth and multiple retrospective case studies. It is noted that the existence of two different

motors might possibly explain some of the contradictions in strategic management and organizational change theories. The strategy-content – strategy-process relationship is elaborated on and further determined. In particular the role of various learning dynamics is emphasized as important for strategy direction and path dependency in strategy creation. Various foundations for learning practices are discussed. Different strategy-creation paths are presented as alternatives to the industry and resource-based paths.

The multiple retrospective study is continued in *Chapter Nine*. One of the two strategy motors and one of the strategy logics identified in the single in-depth and multiple retrospective studies are examined in detail. The basic character of the motor is outlined and the origins and drivers of strategy-creation are thoroughly investigated. The focus is on detailed examinations in terms of learning dynamics. These learning dynamics are debated in relation to contemporary theory in the respective field.

Chapter Ten investigates the other motor in the same way as in the prior chapter; its basic characteristics are described and analyzed. The various learning dynamics are at the centre of the examination. Origins and drivers of strategy-creation in the form of cognitive structures and knowledge types and processes are discussed. In addition, various barriers to strategy-creation, particularly cognitive barriers and biases, are discussed in relation to the multiple retrospective case study and prior theory.

1.8.4 Part Four

Chapter 11 briefly summarizes the conclusions from the single in-depth and multiple retrospective studies and discusses the findings in relation to prior theory. The origins, drivers and barriers in regard to strategy-creation are specified. Constructs of strategy-creation and strategic management development in terms of various learning dynamics, knowledge assimilation practices and knowledge structures, are presented. The constructs' relationship to prior theory is examined .

In *Chapter 12*, a tentative model of strategy creation and strategy content – process relationships is presented. In addition, the conclusions and models are developed further in a more speculative fashion. The alternative model specifies and

includes tentative explanations as regards strategy creation. It also provides a possible explication regarding strategy process – content relationships. In the more speculative section implications of the findings and conclusions for strategic management, the theory of the firm and international management research are presented. In addition, suggestions for further research on strategy-creation and strategic management, with some specific areas for future inquiry, are provided.

Chapter 2

A PILOT STUDY OF STRATEGIC MANAGEMENT

2.1 Introduction

The overview in the introductory chapter divided the multiparadigmatic field of strategic management research into four separate areas. It was observed that controversies exist both within and between these areas and regarding their normative output. The discussion exposed what appeared to be a remarkable paradox and some related knowledge gaps as regards strategy creation and change. In particular, it was noted first that strategic management theories, especially those with a strategy-content approach, assume that strategies originate with central (top) actors, but that in reality the centre often opposes strategy change and creation. Second, strategy-content theories assume that strategy and strategic change emanate from either prevailing industry structures or existing resources, but it seems as if the periphery often plays a more important role. Given these initial considerations, the first step in the study was to examine the relevance of strategic management theory and its normative implications for strategic management practice.

The point of departure was that there might be managerial definitions and practical aspects of strategic management that fall between the four areas of strategic management outlined above and that strategy research has failed to capture. It seemed particularly relevant to turn to strategic management practice. Managers are often unsatisfied with the advice they receive in strategic management, as indicated in the introductory chapter. Moreover, the domination of economics-based research has tended to focus strategy research on a normative science track with an emphasis on normative studies and a consequent de-emphasis on in-depth clinical studies. Consequently, certain aspects of strategic management related to the highlighted knowledge gaps may have been neglected. In sum, the conceivably naïve approach of "going back to reality" seemed to be justified as a first exploratory stage despite the

size, growth, and achievements of research in strategic management A case study of strategic management practice, and particularly the role of complex foresight horizons, was conducted in close cooperation with a multinational company.

This chapter focuses on the relevance of strategic management theories and their normative advice regarding strategic management practice, before considering a more comprehensive investigation of the field. The general inquiry concerns strategic management practice and in particular what distinguishes complex foresight horizons and strategy creation from other strategic management questions. The issues are examined through an explorative pilot case. The two fundamental approaches to strategy research, *strategy content* and *strategy process*, and the fundamental strategic questions of *where to go* and *how to get there*, are in focus. The chapter, which primarily is intended to provide better framing of and, more specific and refined research questions also concludes by a better understanding of the relationships between strategy content and strategy process. In particular, the pilot study provides added insight regarding the character of complex foresight horizons and different categories of strategic issues. The chapter concludes that strategy creation appears to be different in nature from many other strategic management considerations. In addition, the pilot phase influenced the choice of the subsequent methodology, which is discussed in the following chapter.

2.2 Design of the Pilot Study

The explorative pilot study was undertaken in order to achieve a more comprehensive understanding of strategic management practice, the basic strategic matching between the company and its environment, strategic information gathering and intelligence, and the relevance of strategic management theory and its normative implications. The research questions were broad and concerned both strategy-content and -process issues. The objective was to find out what kind of issues were considered strategic by the company, how its managers perceived the matching between the company and its environment, how information was acquired about this relationship, and how strategic planning and strategic decision-making were carried out.

Another aim was to investigate what distinguishes *strategy* questions for the long-term future (involving complex foresight horizons) from other management issues. One objective was to develop an initial understanding concerning the relationship between strategy process and strategy content and the two fundamental strategic questions, *where to go* and *how to get there*. The study consisted of a broad investigation of various strategic issues at a Swedish MNC in the trailer coupling systems and later the trailer surveillance-systems industry, Scanmeck Couplet (later Couplet)² in the early nineties. The study was conducted at headquarters in close cooperation with the president of the company, and it focused on strategic issues facing the MNC in the early nineties. The study was conducted through participating observation, including conversations, discussions, in-depth interviews and a survey of internal strategy documents at Scanmeck Couplet headquarters and of various strategy-related secondary material.³ The focus was on practical strategic considerations, which were later to be related to an evaluation of strategic management literature. It was not participant observation in the form of being employed by the company, but rather reviewing and analyzing internal strategy documents on site and participating in strategy related meetings and conversations, in addition to making interviews. A report was, however, submitted to the President as a basis for review of strategy information gathering and analysis. The participant observation lasted three separate weeks on site together with additional occasional visits and work at the company including further conversations and interviews. Interviews and conversations were not taped, but minutes were taken. Any quotations were agreed to be anonymous.

There are no well-defined rules or guidelines to follow when conducting research related to strategy process (Van de Ven and Huber, 1990). Nevertheless, given the pre-paradigmatic status of strategy process (especially the relationships between strategy process and strategy content) and the purpose of the exploration, a qualitative method was chosen. The specific method used was an in-depth case study. The major advantage of case study research is that it allows in-depth examination of the research

² All names, figures, dates, locations and companies are disguised.

³ It is important to note that the participant observation did not feature a true ethnographic, on-line, participant-observation methodology of the type outlined by Van Maanen (1988), in which

object (Hägg and Hedlund, 1978; Valdelin, 1974), which was the objective here: a close investigation of strategic management and strategy processes.

The focus was on understanding and trying to interpret strategy and its context. The research method was influenced by "grounded theory"⁴. The research methodology of "grounded theory"⁵ (Glaser and Strauss, 1967; Strauss and Corbin, 1990) within qualitative research provides a rather detailed scientific method for inductive research. Grounded theory aims at identifying, developing and relating concepts through a systematic set of procedures where creativity is a vital component in the interpretive process of linking data to theory. When this approach is used, the issue of pre-understanding becomes a concern. The founding fathers of grounded theory, Glaser and Strauss (1967), recommend starting the empirical work as free from theory as possible without any preconceived views of theoretical explanations or hypotheses.⁶ On the other hand, Yin (1989) advises researchers to review the literature and even to develop a theory before entering the field.⁷ Of course, it is impossible to start a study without any personal experience or theoretical pre-understanding. In finding a research problem and research questions, it is natural to base these on personal and professional

considerable time is spent on-site, on building relationships with people involved and on issues not directly related to the research question.

⁴ Since interpretation and meaning played an important role, the approach had "hermeneutic" dimensions in this sense. For example, there was a reciprocal process of explanation and interpretation (i.e. the hermeneutic circle). There are several discourses within hermeneutics and there are no generally established rules regarding research methods in hermeneutically based research (Lindholm 1979).

⁵ Strauss and Corbin (1990, p.23) define a grounded theory as "one that is inductively derived from the study of the phenomenon it represents. That is, it is discovered, developed, and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon. Therefore, data collection, analysis, and theory stand in a reciprocal relationship to each other. One does not begin with a theory and then prove it. Rather, one begins with an area of study, and what is relevant to that area is allowed to emerge."

⁶ In fact, the advice of Glaser and Strauss (1967, p.37) is to disregard theories at first: "An effective strategy is, at first, literally to ignore the literature of theory and fact on the area under study, in order to assure that the emergence of categories will not be contaminated by concepts more suited to different areas."

⁷ This might seem highly contradictory. However, a closer study of the arguments indicates that it is more a question of differences in attitudes and emphasis. In fact, Glaser (1978) discusses the inductive-deductive mix, with deductive work based on codes generated from data in the service of further induction. Pettigrew (1990) also stresses the deductive element of case study research and emphasizes an a priori established analytical framework. It is important to note that these scholars do not refer to a method of logically deducing research hypotheses from a pre-existing theoretical framework, but rather a loose theoretical web from which data collection can start and then be adjusted in terms of research design and questions for study.

pre-understanding from the start. The procedure chosen for the pilot study was to avoid a thorough review of the literature in advance, while still allowing for a loose framework of concepts and constructs before commencing the research on the case company.

Certain criteria were established for selecting the pilot case. It was important that some member of senior management supported the research from the start and would be able to provide assistance inside the firm during the research process. This criterion was of significant importance as participating observation, in-depth interviews and on-site secondary information were to be used.⁸ Another requirement was that the company be a multinational of a substantial size, since complex organizations were to be studied. Finally, and naturally, there had to be a high probability that various strategic processes would be going on in and around the firm.

Besides these factors, the basis for selection of the pilot case was convenience and accessibility. A supervisor who had a prior relationship with the company and its president was able to arrange good and close access. Another important factor in selecting the specific company was that the researcher had considerable experience at the firm's parent company, having previously been working as a consultant at Scanmeck Business Development. The case firm, however, was independent and in a separate industry. Hence, the researcher was not influenced by any preconceived views about the specific firm and its strategy processes, but at the same time was well acquainted with the Scanmeck Corporation and its strategies. This factor also helped in gaining confidence and inside support from the start.

One of the most important aspects of research design is deciding the unit of analysis for the case study (Yin, 1989). In this first phase, it was decided to use any on-going strategy processes within the firm as the unit of analysis. The reason for this broad approach was that the various on-going strategies were not known in advance. Furthermore, it was considered important to avoid getting prematurely locked into a certain focus.⁹

⁸ No detailed description or evaluation will be provided for each specific techniques that were used in the study. This is consistent with the reasoning of Wolcott (1990) who argues that qualitative studies have become both widely known and accepted in the last two decades and that there is no longer any call for each researcher to defend or provide an exhaustive review of literature about each standard procedure (interviewing techniques, observation techniques, etc.). However, Chapter Three (Research Design) provides a detailed discussion of various considerations in qualitative studies.

⁹ The method used is further discussed in the methodology chapter (Chapter Three).

2.3 Scanmeck Couplet in the Truck Trailer coupling Industry

2.3.1 Scanmeck Couplet

Couplet, which was founded in Sweden more than 45 years ago, is a leading producer of trailer coupling mechanical systems, electro hydraulic systems and other trailer-surveillance equipment worldwide. The company has grown considerably during the last fifteen years from a minor part of the Swedish specialty mechanics manufacturer Scanmeck to a global MNC in the trailer surveillance systems industry. Scanmeck Couplet led the consolidation of the Swedish trailer coupling mechanical systems industry before moving into Europe in the mid eighties and has since expanded globally. The principal strategy from the start was to acquire companies, restructure them, and make them more efficient. Scanmeck Couplet first moved from being a local Swedish company to having manufacturing and assembly activities in all major European countries. Later the company expanded directly into New Zealand, Australia and Japan, and through licenses it established manufacturing in another fifteen countries, several of them in South America. The company became independent under the name of Couplet in 1997. Through various strategic alliances and a significant merger, Couplet entered the US. By the mid-nineties it had become a global MNC with sales of USD 5,234 and 31,000 employees (1998), far from its former modest existence in the Scanmeck group with some 3,000 employees and sales around SEK 300 M (1980, see Appendix C for more details).

Mr. Leif Svensson, the president of Scanmeck Couplet, played a dominant role in the development of the company and may be considered its founder. In the entrepreneurial spirit of Scanmeck, he determined and implemented objectives and policies that restructured the company and, in fact, the entire European trailer coupling mechanical systems industry. From the start, the Scanmeck Couplet organization was based on simple structures, informal communication, and personal initiatives, in a manner consistent with the way of doing business at Scanmeck, where structures consisted of a pragmatic mix of what was suitable under the circumstances. Coordination was based on socialization and a business-oriented culture. Headquarters in the South of Sweden were small at the start and consisted of around ten people, managing around 5,000 employees in the mid- and late eighties. A new president, Carl

Johansson, was appointed in 1992 when Leif Svensson was promoted to head Scanmeck Components. Senior management consisted of three vice presidents (Finance, Technical, and Marketing & Sales), besides the President himself. The VP Finance was responsible for central accounting and finance; the VP Technical, for technical coordination, product development, design and construction. In the beginning Scanmeck Couplet had a small development company which later grew and was split into three units, one in Sweden, one in England and one in Germany. Since their entry into Asia and the US, the company also had cooperative arrangements in product development there.

2.3.2 The Trailer coupling mechanical systems and Truck Trailer coupling

Industry

Since the early eighties, the industry had gone through a steady stream of mergers, acquisitions, joint ventures and other alliances. Since it is a subcontractor industry, it is directly dependent on the truck industry and its business cycles and strategies. Truck companies have increasingly put pressure on the industry in terms of price cuts, delivery/JIT (Just In Time), and new technology. In addition, growing buyer demands for a full product range have tended to reduce the number of suppliers.

The trend toward concentration was accentuated by the requirement of a global presence and a full product range. The consolidation tendency continued, and by the mid-nineties there were four major global competitors: Scanmeck Couplet, two American companies, F & H (Fasten & Hook Inc.) and Coupling & Co., and one Japanese company, Kima. The competition had been dynamic and fierce throughout the consolidation process and continued to be so. Scanmeck Couplet dominated the European market with a market share of 45% in 1992, but it had no presence on other world markets except for some small joint ventures in Asia. Other market shares for Europe were 32% for F & H, the Coupling & Co. (US) 8%, Kupplung GmbH (Germany) 6%, and Kima 5% (see Appendix C for further information on Couplet).

2.4 Strategic Management in Practice – Scanmeck Couplet in the Early Nineties

2.4.1 Strategic Management at Scanmeck Couplet

Scanmeck Couplet did not have a specific or formalized strategic planning process. The more formal forums for strategy discussions, besides board meetings, were the annual Management Meeting with subsidiary managing directors and senior management and a "Monthly Letter" from subsidiary managing directors to senior management. Along with information on the business environment, these forums constituted a basis for the President's strategic planning.

Business intelligence and analysis were primarily based on customer relationships, reflecting Scanmeck Couplet's sub-supplier situation and production focus. Truck companies also provided crucial information and impulses regarding competitors and new technical solutions and products, as did partners, truck consultants, competitors and suppliers – in order of importance. Most of the information was assimilated in the ordinary course of business, and generally in an unsystematic and *ad hoc* manner. There was no particular system or function for intelligence gathering and analysis, although efforts were made to formalize the assimilation of external knowledge.

One example was the "Monthly Letter." Each subsidiary managing director throughout the world submitted such a letter to senior management at headquarters. Besides internal accounting data, it contained information on new products and product development, customers and the market situation, and competitors. In addition, the President compiled a "Monthly Report" containing information on external actors, among other things. On the technical side a competitor product database was put together by the engineering departments at various subsidiaries. Even if these more formal systems for external information existed, they played a limited role. The general feeling among management was that most information was readily available anyway, apart from what competitors were planning. As one senior Scanmeck Couplet manager expressed it: "It's incredible how much information there is available, we basically know what will happen in the next few years." The information was primarily customer- and production-oriented.

Strategic thinking was not highly regarded in the Scanmeck tradition of doing business. The strategy process at Scanmeck had traditionally been one of incremental strategy formation and opportunism rather than one of strategy formulation and planning. There was skepticism towards strategic planning and analysis in the Scanmeck group, but also Couplet. Strategy was associated with analytical techniques and optimizing exercises, which were considered "far from reality." At Scanmeck they despise strategy and business plans," noted a senior Scanmeck Couplet manager.

At the same time, however, some of Scanmeck Couplet's senior management were beginning to perceive an increasing need for strategic thinking. There were several reasons. Truck manufacturers had generally raised their demands, globalization was soon to come, requests for integrated systems had increased and an entirely new product, a non-mechanical system, had been introduced in the US. "Earlier there were just a few strategic questions, today there are a number of fundamental strategic questions." [a senior Scanmeck Couplet manager].

The newly appointed President, Carl Johansson, felt a need for a common view of Scanmeck Couplet's strategic position among senior management and the Board in order to "... look ahead and make the necessary strategic choices." At the same time, those in favor of more strategic management were unsure as to what methods and tools the strategic management field could offer and how others at headquarters would receive them. Scanmeck corporate managers and other Scanmeck managers, Board members and some members of Scanmeck Couplet's own senior management were difficult to convince. It was apparent that Scanmeck Couplet was facing a number of important challenges. The question was whether they were strategic ones and, in that case, what strategic management methods had to offer.

2.4.2 Three Strategic Challenges for Scanmeck Couplet

Three main areas were considered to be strategic by Scanmeck Couplet senior management and other Scanmeck managers at headquarters. The first area was of general concern and considered strategic by all: *production*. The second strategic issue, *competition and globalization*, was of importance mostly to senior management. Third and more indeterminate was the question of a new product, a *non-mechanical coupling system*. Only a few of the managers considered this matter

important. Some versions of the product had been on the market for years, but few people in the industry really believed in it. Each of these strategic issues is discussed below.

Production questions were generally considered to be of strategic importance. The overall aim was to live up to the increasingly demanding requirements of the truck industry. Production strategy concerned automation, economies of scale in component manufacturing, standardization of products, installation of MRP systems, and other measures to cut costs and satisfy the requirements of the truck industry. The strategy for production was discussed in terms of TQM, JIT, zero defect and general cost squeeze. It concerned overall improvement of operating efficiency, but also transfer of production skills between units.

Globalization was the second strategic issue that concerned senior management and especially the President. Pressure for globalization had increased as truck manufacturers started to reduce the number of suppliers during the eighties. Other changes in the environment which increased the need for global presence were the establishment of Asian truck production trans-plants in the US and Europe and new world-wide truck concepts. In the late eighties Scanmeck Couplet had no presence in the US and a very limited one in Asia. Scanmeck Couplet's two major American competitors, F & H and Coupling & Co., were present in North America and Europe, but had little presence in Asia. Japanese Kima, the third major competitor of Scanmeck Couplet, was present in all three areas.

Competition and the competitive environment were of great concern to senior management and were occasionally analyzed and discussed in terms of Porter's five-force model (Porter, 1980), introduced by the new President at management meetings. The aim was global establishment: "To be able to continue as a major actor in the business, we must be active globally with presence in the Triad of North America, Europe and Japan" (Product Line Profile - Scanmeck Couplet, Budget 1993). The strategy was to consolidate activities in Europe, establish directly owned units in the US and set up joint ventures in Asia. The globalization process had started, but was making slow progress, impeded by competitors' actions, difficulties in finding reliable partners, and a generally troublesome process of building competencies in the new markets.

The third strategic question identified was much more vague than the others. It was not even thought to be particularly important or strategic in the late eighties and early nineties. It concerned the potential of a new product, a *non-mechanical system*. Truck safety legislation had an impact on the truck-trailer coupling industry. A few states in the US had trailer coupling mechanical systems regulations, but the resistance from truck owners was quite strong. In 1976, the US National Highway Traffic Safety Administration (NHTSA) ordered truck manufacturers to equip their trucks with non-mechanical systems by the 1979 model year. The truck-manufacturing industry lobbied against the non-mechanical system requirement, claiming that it would be too expensive. Insurance companies, various interest groups and legislators were on the other side, arguing for a non-mechanical system device. Finally, after many battles back and forth, the NHTSA was directed to review the non-mechanical system requirement in 1987. The truck manufacturers were required to introduce non-mechanical systems gradually as standard equipment on all new trucks sold in the US, from 1994 on the first-trailer coupling and from 2000 on the second-trailer coupling. The two major alternatives were electro mechanical systems and electro hydraulic systems. However, the technologies were far from well developed, and the uncertainty regarding the products and the market was high.

It was not clear which industries and companies would produce the non-mechanical systems. It was questionable whether truck subsuppliers would play a role, since the technologies were unfamiliar. The world volume for electro hydraulic systems was limited. Electro-hydraulic system prototypes had been presented as early as the 1960s, and electro hydraulic systems had been commercially launched in the late 1970s, but without success. Nevertheless, Scanmeck Couplet's two principal American competitors, F & H and Coupling & Co., manufactured electro hydraulic systems and electro mechanical systems on a small scale. Japanese Kima also produced minor volumes. In Europe, Scanmeck Couplet's major market, volumes were negligible. Scanmeck Couplet noticed the developments in the non-mechanical systems area, but waited for customer initiatives and for the market to develop. The company had limited production of electro mechanical systems and no production of electro hydraulic systems six years after the legislation.

Within the company there were some proponents of electro hydraulic systems, but no particular projects. Scanmeck Couplet's new President since 1992, Carl Johansson, thought that electro hydraulic systems were becoming increasingly important, and he was somewhat surprised that not more advance had been made by the company in this regard. It was, however, not considered a major issue by some, let alone a strategic one.

Although there was considerable uncertainty about the potential of a non-mechanical system product, the President and some other proponents still thought that Scanmeck Couplet had to be more proactive than they had been historically in regard to non-mechanical systems, especially electro hydraulic systems. One possibility considered was to begin assembling electro hydraulic systems in order, perhaps, to enter the electro-hydraulic system market fully with Scanmeck Couplet's own, superior, products later on. However, this strategy was far from obvious at Scanmeck Couplet in 1992, and it was not fully supported by all.

To summarize, Scanmeck Couplet was facing three major strategic issues: first and foremost, *production*; second, *globalization*; finally, and much more uncertainly, a potential product in the form of a *non-mechanical system*. Each of these three strategic areas can be illustrated by three quotes used by the new President in the introduction to his first annual Management Meeting with senior management and subsidiary managing directors in January, 1993, where strategic issues were discussed.

The first quotation, by former President John L. McCaffrey of International Harvester, stressed the details, the nuts and bolts, of *production*: "The mechanics of running a business are really not very complicated when you get down to the essentials. You have to make some stuff and sell it to somebody for more than it cost you. That's about all there is to it, except for a few million details."

Later, the President of the Scanmeck Group, who had built up the group's position of global leadership in specialty mechanics and other areas, was quoted as an illustration of the competitive situation in the *globalization* process: "Contrary to the military, industry is always at war. If it is peace it is called cartel and those are, as you know, forbidden."

Toward the end of the Management Meeting, "other issues" were discussed, among them *electro hydraulic systems* and other *non-mechanical systems*. At this

point, the following was cited on a slide: "There are three kinds of human beings. Those who make things happen. Those who watch things happen. Those who wondered what happened".

In light of the three strategic questions, managers who were skeptical towards strategic analysis and planning thought they had a rather strong case. Strategic management analysis and strategy tools did not seem to be of any great help in attacking the issues. The first strategic issue, concerning production strategy, did not need any analysis or planning; it was clear what had to be done. The second issue, globalization, was quite clear as well: just follow the competitors which were already global and build up the necessary resources to do so. Finally, analysis and planning would be of little in addressing the third strategic problem, either, the non-mechanical system issue. Uncertainty and dependence on external forces were so high in this case that they could not possibly be planned for.

2.5 Complexity of Foresight Horizons - Three Strategic Issues for Scanmeck Couplet

2.5.1 Strategic Challenges at Scanmeck Couplet – An Initial Approach

The discussion of Couplet's strategic issues is based on the fundamental strategic questions of *where to go* and *how to get there* in terms of *strategy content* and *strategy process*, as described in the first chapter (see Figure 2.1). The first fundamental strategy question concerns *industry factors* in strategy-content terms and *strategy formulation* in process terms. The second question focuses on *resource* issues in strategy content and *strategy formation* in strategy process.

	<i>Where to go?</i>	<i>How to get there?</i>
<i>Content</i>	<i>Industry position</i>	<i>Resource position</i>
<i>Process</i>	<i>Strategy Formulation</i>	<i>Strategy Formation</i>

Figure 2.1: An overview of strategic management perspectives.

As described above, many Scanmeck Couplet managers perceived production as a primary strategic issue. It concerned production efficiency and was well defined. Both fundamental strategy questions, *where to go* and *how to get there* in terms of strategy content and process, were clear and given. Furthermore, the answers to them were unequivocal. In terms of strategy content, the industry position to be achieved was low cost and improved efficiency. Scanmeck Couplet possessed the resources and capabilities to take the measures necessary to achieve operational efficiency. As for strategy process, various management tools were available (TQM, JIT, etc.), and strategy formation and implementation were quite rudimentary. Thus, it seems as if all aspects in terms of strategic management were well-defined and clear (see Fig. 2.2).

	Where to go?	How to get there?
Content	X	X
Process	X	X

Figure 2.2: All aspects of strategic management seemed well-defined and clear in regard to the production issue.

It is difficult to discern how extensive use of strategic management in general and strategy analysis and planning in particular could have contributed to solving this production problem. In fact, the problem does not really seem to be strategic, but one of operational efficiency, which "...is a necessary part of management, but it is *not* strategy" (Porter, 1996, p.78). It is an operational question in the present and has little to do with the long-term future growth or renewal of Scanmeck Couplet. It is more a management and production issue concerned with increased efficiency given Scanmeck Couplet's strategic position in the industry and given the company's resources and capabilities. Consequently, strategy theory and strategy models do not seem entirely appropriate for addressing this question, although management and "strategy" literature in recent years has extensively discussed these kinds of issues in terms of strategy. Various management tools (TQM, JIT, partnering, etc.) appear to be more appropriate than strategy models.

Scanmeck Couplet used management and operational tools to address the production question. It was necessary to do so in order to improve operational efficiency, keep up with demands from customers and achieve profitability. However, programs for TQM, partnering, and time-based competition were common in the industry and were soon imitated by competitors. Moreover, the benefits of increased productivity were usually captured by the truck makers. Hence, operational efficiency was necessary but did not seem sufficient for Scanmeck Couplet to achieve above-average returns.

In sum, this production issue appeared to be well-defined, without an uncertain foresight horizon or any particular complexity. It was essentially not a strategic issue, but an operational one, and it is doubtful whether its successful resolution would provide above-average profits. It thus seems to have little relevance to strategic management theory and its normative implications.

The second issue perceived as strategic by Scanmeck Couplet managers was globalization. This issue, too, was rather well defined; the focus was on expansion outside Europe and to position Scanmeck Couplet globally in Asia and the US. Accordingly, the fundamental strategy questions were reasonably clear, as were the answers in terms of strategy content. The answer to where to go was to achieve a global position, primarily in the triad markets of Europe, Japan and the US. The

question of how to get there, in strategy-content terms, concerned the specific resources and capabilities needed to reach the desired positions in the various national markets. What had to be done consisted mainly of internationalizing various known resources and competencies that were needed to expand globally.

As for strategy process in terms of strategy formulation, the President and senior management used Porter's five-force model (Porter, 1980) to clarify the answer to the process question in regard to *where to go*. The answer to the second process question, *how to get there*, or strategy formation and implementation, was much less clear. The real world of Scanneck Couplet was more complicated than the analysis and planning depicted, since the environment and circumstances kept changing as the company pursued its efforts to globalize. Hence, the consequences of each step and alternative in the strategic plan were highly uncertain. As the strategy process towards globalization unfolded, the strategy had to be substantially adjusted. In other words the strategy process changed strategy content. This is why Scanneck and many Couplet managers distrusted strategic planning and strategy (content) models. They provided plans and positions to be achieved, but implementation and strategic learning was largely ignored. In brief, all aspects of strategic management except for strategy formation and implementation seemed clear in regard to the globalization issue (see Figure 2.3).

	<i>Where to go?</i>	<i>How to get there?</i>
<i>Content</i>	X	X
<i>Process</i>	X	?

Figure 2.3: The various aspects of strategic management seemed to be rather well-defined and clear in regard to the globalization issue, except for strategy formation and implementation.

It is obvious that globalization was an important strategic issue and that strategic planning in terms of strategy-content models in fact partly assisted in its

resolution. However, since globalization as envisioned was based on historic and given industry and resource positions already held by Scanmeck Couplet's main competitors, it would be certain to provide any substantial above-average profits. The focus was on reaching the same global position as the main competitors. Any profits earned from strategy seemed more likely to be on a par with those of competitors, at best.

In summary, this strategic issue was a challenge for Scanmeck Couplet, and it obviously involved a more uncertain foresight horizon and more complexity compared to the first production issue. Strategic management theory offers useful explanations in terms of strategy content, and its normative interpretations assisted Scanmeck Couplet in identifying the strategic positions to be attained.

The formation process, however, was another question. Strategy analysis provided a set of globalization alternatives in terms of industry and resource positions. However, the consequences for each step and alternative in the plan were highly uncertain. And as the strategy process towards globalization unfolded, the strategy had to be adjusted. Strategy formation changed strategy formulation and the answers to the content questions of *where to go* and *how to get there*. Such changes seem to be largely neglected by many strategic management theories and perspectives. This insufficiency appear to be problematic, since strategy essentially becomes static when the influence of strategy formation processes on strategy formulation and content is overlooked. In normative terms the separation of analysis and planning from formation reduces the possibility of adapting strategy to changing conditions; strategic learning seem to be neglected.¹⁰ As for profit prospects, it seemed unclear whether any above-average profits could be provided from successful resolution of this second strategic issue, since it was mainly related to given industry and resource positions already captured by major competitors.

Scanmeck Couplet's third strategic issue concerned a potential product in the form of non-mechanical systems. The strategy-content approach appeared no to

¹⁰ The question of the formation and implementation process could have been overlooked if strategic planning had provided not only clear strategic alternatives, but also clear consequences for those alternatives. However, under those circumstances the situation itself could have been optimized, in which case "...the strategy question largely vanishes and just tactical challenges remain..." (Schoemaker, 1990, p. 1184). Thus, the situation would resemble Couplet's first strategic issue of production.

provide solutions to this strategic problem in the form of answers to either of the fundamental strategic questions: It was unclear where to go in terms of a new product, the electro--mechanical system, the electro-hydraulic system, some other product, or no new product at all. Consequently, Scanmeck Couplet had no guidance as to how to get there in terms of organizational responses, either, wherever that "there" was.

Answering the fundamental questions of strategy in strategy-process terms was at least as uncertain. Not only was it unclear what to plan for and what to implement; the fundamental strategic questions as such were indefinite. Even in the late eighties and early nineties the question of *where to go* in terms of a new product had still not been clearly formulated; in fact, it was not on the strategic agenda at all. The question of *how to get there* was at least as vague. Hence, there were no given strategy questions and no given answers regarding any aspects of strategic management (see Figure 2.4).

	<i>Where to go?</i>	<i>How to get there?</i>
<i>Content?</i>	?	?
<i>Process?</i>	?	?

Figure 2.4: Virtually all aspects of strategic management seemed to be unclear and ambiguous in regard to the non-mechanical system issue.

There seemed to be no particular normative strategic management advice for Scanmeck Couplet on the third strategic issue. Strategy-content models seemed to have little to offer in the way of normative guidance, since they appear to mainly deal with well-defined industries and resources. Strategic planning and formulation were quite meaningless for this ambiguous question, and strategy-formation theories do not

provide any specific prescriptive suggestions. Normative advice aside, the more serious problem is the apparent lack of any satisfactory descriptive or explanatory theories of strategic management that could illustrate and clarify this third strategic issue facing Scanmeck Couplet.

The focus on industry positioning and collusive behaviour within industries, and the emphasis on path-dependent resources in strategy-content theories, appear not to be exactly relevant for this particular issue. During the late eighties and early nineties there was no "non-mechanical system industry," and it was highly unclear what the critical resources and capabilities for success in this industry would turn out to be. At the same time, some aspects of strategy-process theories, rational planning, on the strategy formulation side, or environmental dictates, on the organizational change strategy formation side, do not seem quite relevant either. In fact, many directions of strategy research seems somewhat perplexed when confronted with this kind of strategic issue. The fact that questions of strategy content and strategy process seemed largely indistinguishable on the issue of a potential new non-mechanical system contributes to the confusion. It seems as if the four divisions of strategy outlined in Chapter One are essentially interwoven for this strategic issue.

It is particularly frustrating if strategic management theory cannot provide satisfactory explanations and/or normative implications on Scanmeck Couplet's third strategic issue, since it seems to be the most complex question of the three and the one which might be of crucial importance for Scanmeck Couplet's long-term future and growth. Conceivably, its resolution might even result in a substitute for Scanmeck Couplet's core product (the mechanical coupling) and, in turn, for the Scanmeck Couplet company itself. On the other hand, it could also provide Scanmeck Couplet with a tremendous opportunity for growth. In fact, it seemed to offer a possibility of above-average profits. In brief, this strategic issue, unlike the other two issues, involves a *complex foresight horizon*. At the same time, it appears as if strategic management theory do not provide sufficient explanations and normative advice on the issue.

2.5.2 Three Different Foresight Horizons

Two observations from the pilot study stand out in relation to strategic management theory. First, regarding Scanneck Couplet's third strategic issue, strategic issues involving *complex foresight horizons seem to challenge some aspects of strategic management theories and perspectives*. The strategic management field appears somewhat confused in confrontation with this type of *strategy-creation* issue, in descriptive and explanatory terms and also in respect to normative implications. Second, as regards Scanneck Couplet's second and third strategic issues, *the relationship between strategy content and process seems to be of greater importance when more complex foresight horizons prevail*. The fact that they appear interwoven questions the separation of the two directions in strategic management theory. The process – content connection is far from an entirely new observation, but it has attracted surprisingly little attention in strategic management research despite its vital importance. It appears to be under-researched both empirically and theoretically.

It almost seems as if strategic management theories break down in the face of Scanneck Couplet's third strategic issue, the potential product of non-mechanical systems. Strategic issues involving more complex foresight horizons appear to challenge some of the foundations of traditional strategic management theory. The third strategic issue was clearly more complex than the other two and differed from them profoundly in terms of uncertainty and foresight horizon. It is easy to predict how various actions would influence the outcome for Scanneck Couplet's first challenge, production. In addition, it is clear when the end will be reached. When a measure designed to improve operational efficiency has been implemented, its effect can quickly be determined. On the second strategic issue, globalization, there is more uncertainty. Strategic alternatives can be defined, but the outcomes are less certain, since implementation is ambiguous. In addition, it is not certain when the end will be reached. The globalization process might take two or three years, or many more years; the time horizon is unclear. In the third case there is not even a clear strategic issue to begin with, and consequently there are no specific alternatives. The end might be reached tomorrow - or never. The American authorities might withdraw the non-mechanical system requirements as suddenly as they had imposed them (as had happened earlier). Alternatively, the non-mechanical system products might maintain

a lingering existence for another twenty years, as the electro-hydraulic system had for the last two decades. Or they might become successful growth products in a future trailer surveillance systems industry. This strategic issue truly involves a complex foresight horizon.

The three strategic issues examined are of course not entirely independent of each other. Globalization might influence production efficiency and costs. Similarly, the non-mechanical system issue might have implications for production and globalization. Nevertheless, the three strategic issues were perceived as separate and distinct at Scanmeck Couplet, and they seem to have quite different characteristics, as outlined above. In particular, they seem to be quite different in terms of foresight-horizon complexity. For the production issue, the foresight horizon was essentially clear. For the globalization issue, it was unclear, since the future consequences of current actions were uncertain. Finally, the non-mechanical system issue was both unclear and ambiguous; not only were the future consequences of current actions uncertain, but the preferences for those consequences were uncertain as well (cf. March, 1978).

Since business strategy is historically tied to military strategy, which is the source of many currently used concepts in strategic management (cf. Quinn, 1980), it might be illustrative to distinguish the different issues and foresight horizons in terms of complexity of foresight horizons in different types of battles. Three essentially different types of foresight-horizon complexity can be distinguished in the context of war.

First, in the classical battle, where opposing forces meet and fight on an open field, the foresight horizon seems rather clear, despite all the complications involved. It is clear where the battlefield is, who the enemy is and essentially also where he is. The war equipment (resources) involved, the environment (industry), strategic plans (strategy formulation) and how the war will be fought (strategy formation) are also fundamentally clear.

More modern wars appear to be more complicated. In the Vietnam war it was highly unclear for the US where the battles would take place and, in particular, where the enemy was. And it was extremely unclear how and where the war itself would be fought (strategy formation). Nevertheless, the war equipment involved (resources), the

general environment (industry) and the strategic plans (strategy formulation) were quite clear.

The recent wars in Somalia and Bosnia reveal an even more complex situation. In those wars, or rather "multiple wars," all aspects were complex. It was unclear where the wars would take place, where the enemy was and even who he was, or whether there was an enemy at all. It was not even clear whether there was peace or war. Some of the war equipment involved (resources) was known, but it was highly unclear what kind of equipment different fractions possessed. The environment (industry) was indeterminate, and it was impossible to rely on any strategic plans (strategy formulation). Moreover, it was not clear how the war would be fought or even whether it would be fought at all (strategy formation).

2.5.3 Strategic Management at Scanmeck Couplet – Normative Considerations

As highlighted above it seems as if *foresight horizon* and *complexity* of strategic issues are of importance in the evaluation and examination of strategy and the possible use of strategic models. The question is whether strategic management has any role to play in a clear foresight horizon. On the other hand, in complex foresight horizons strategy matters, but the question is whether models of strategic planning and analysis are sufficient under those circumstances. To determine whether certain Scanmeck Couplet managers were justified in their skepticism toward strategic management, a short examination of some strategy methods and tools available and how they might have assisted Scanmeck Couplet is required.

There are several arguments that advocates of strategy analysis and planning could use to counter its critics at Scanmeck Couplet and Scanmeck. For example, the reason for the negative attitude of some managers is often held to be their limited experience with strategic management, or their failure to apply it properly or to use the right methods. These and related assertions about strategic management are briefly discussed and critically evaluated below, based on a brief and non-exhaustive selection of a few strategic management approaches and tools. This review is not intended to be a comprehensive investigation and evaluation, but as a means of applying some of the normative elements of strategic management to Scanmeck

Couplet's strategic problems and to analyze whether there was any substance to the aversion of certain Couplet and Scanmeck managers to strategic management. Before this critical examination, it must be acknowledged that according to several studies analytical techniques and strategic planning are beneficial in decision- and strategy-making (some recent contributions: Dean and Sharfman, 1996; Miller and Cardinal, 1994; Schwenk and Shrader, 1993).

First and foremost is the question to what extent *strategic planning* and *analysis* should be used at all. Most managers at Scanmeck Couplet agreed that some analysis of external and internal factors was necessary and that some strategic alternatives had to be formulated, but the question was to what extent. Critics of strategic management are often met with the argument that they discredit it specifically because they do not use it enough. In fact, it could even be maintained that Scanmeck Couplet with its entrepreneur-driven organization within the pragmatic and non-formal Swedish Scanmeck Group simply did not devote adequate attention to strategic analysis and planning, and that if they did, they would recognize the benefits and achieve competitive advantages.

There are indications that this organizational buy-in and commitment are important if strategic planning is to be effective (Hopkins and Hopkins, 1997). However, when more closely examined in the context of Scanmeck and Couplet, this argument partly seems to miss its point. It appears as if the problem was much more fundamental. Managers in the Scanmeck Group had used and even been committed to strategic planning, but appeared to distrust it since it seemed to produce unmanageable plans rather than competitive advantages. It seemed as if planning had promised to do everything, but not quite kept its promises, as Mintzberg (1994, p. 415) concludes in his long and severe criticism of strategic planning: "...our discussion has made clear that 'strategic planning' did not work, that the form (the 'rationality' of planning) did not conform to the function (the needs of strategy making)".¹¹

Supporters of strategy analysis and planning often argue not only that planning as such has to be taken seriously, but that it is the *planning process* that counts, not

¹¹ Even when planning appears to be working, some argue that it provides few advantages. As Hayes (1985, p. 111) pointed out regarding managers' views of strategic planning: "Their complaint, however, is not about the *misfunctioning* of strategic planning, but about the harmful aspect of its *proper* functioning."

the plans *per se*. However, it seemed as if managers at Scanmeck and Couplet had taken this factor into consideration as well, even if planners perhaps had not. Strategic plans had actually been made, but mostly for the filing cabinet. As Quinn (1980, p.122) noted in his detailed study, planning is "like a ritual rain dance; it has no effect on the weather...but those who engage in it think it does."

One standard argument by proponents of strategic management is that if only the right methods are used it will be beneficial. The question is, of course, when these methods will be found. The differences between various types of SWOT (strengths-weaknesses/opportunities-threats) analyses, more specified industry/environment or firm/resource methods or other methods for strategic analysis involving resource-environment matching seemed minor for the managers involved despite the continuing development of new techniques in this area. In fact, the continuous arrival of new strategic management models was another remark by Scanmeck and Couplet managers.

Another possible explanation for why strategic planning and analysis may seem insufficient might be the lack of accurate input information. The counter-argument is that if only the right information and *intelligence* is used, strategic analysis and planning will be beneficial. The President of Scanmeck Couplet acknowledged this point. He made an effort to improve the quantity and quality of information on strategic issues, but perhaps he did not do enough. To solve this problem, academics and consultants supporting strategic planning and analysis have proposed various Management and Executive Information Systems and Business and Competitor Intelligence Systems. A more formal Business Intelligence System could have provided Scanmeck Couplet with more information. It is not entirely clear, however, whether it would have provided the most valuable information. It might be that the advantage for the manager rather is in the current, non-documented information transmitted by word of mouth and has little to do with "...many routine reports that his organization provides for him...In other words, gossip, speculation, and hearsay form a most important part of the manager's information diet." (Mintzberg, 1973, p. 36).

This assertion was verified in the case of Scanmeck Couplet. The most valuable information and knowledge was achieved through informal means and on

more haphazard grounds (Regnér, 1991). Many formal competitive and business intelligence systems have largely failed to provide adequate strategic information and knowledge. Their point of departure is prevailing strategies, industries and resources, whereas strategies of value for the future seem to be centred in less apparent areas. In an investigation of competitor analysis systems, Ghoshal and Westney (1991, p.19) report that "...a majority perceived...a significant gap between what was needed...and what was currently being delivered...".

There are clearly more detailed and sophisticated models for strategic thinking today than in the early days of the strategic planning era. Game theorists would most probably have recommended that Scanmeck Couplet take a look at their strategy models. Basic principles of strategic decision-making have been developed during the last two decades in *game theory*, and they are now more or less readily available to managers in the form of various approaches and tools (e.g. Dixit and Nalebuff, 1991).

Even though Scanmeck Couplet's senior management did not specifically look into this "science of strategy", it is somewhat difficult to imagine how game theory would have helped them. It is based on some quite restrictive and unrealistic assumptions which did not seem applicable to Scanmeck Couplet's strategic challenges, since strategic issues and their outcomes need to be well defined in advance. Perhaps game theory could have been used for some specific aspects of management, such as well-defined production investment decisions, but the question is how strategic these particular questions were. Game theory seldom seems to provide practical contributions in real-world situations. As Schoemaker (1991, p. 1185) reports regarding game theory, "...noise, delay, context and process, learning, instability, coalitions, bribes, threats, rule mutability, natural selection...make it unlikely that simple or general rules can be derived for complex real-world strategy problems."¹² And even if there were an insight to be gained from game theory, it is not likely that Scanmeck Couplet's senior management team would have probed into the mathematics, logic, methodologies and jargon of this theory in the first place.

Perhaps bounded rationality simply rendered Scanmeck Couplet's senior management (and managers in general) incapable of applying game theory and other forms of strategic analysis and planning. This incapability could, at least partly, have

¹² Schoemaker (1991) refers to Boyd and Lorberbaum (1987).

been remedied. *Cognitive theory* research has pointed to a series of fundamental strategic decision-making errors. Ways of correcting these are now available to managers. There are a whole range of explicit decision-making techniques for managers facing important strategic considerations (e.g. Russo and Schoemaker, 1989, Olmsted Teisberg, 1991).

Again, however, this factor seems to have had little impact on strategic decision-making in general, since a specified strategic question and strategic alternatives need to be present. Thus, it is not evident that providing Scanmeck Couplet's senior management with a course in "the ten most dangerous traps in making cognitive decisions" would have made a difference. Their problem was to discover and define the strategic issues and strategic alternatives in the first place. Managers' bounded rationality simply seems to limit their ability to correct bounded rationality.

Perhaps a more loosely defined strategic tool like *scenario analysis* could have helped Couplet, although a fundamental problem would have been present: scenarios about what? For example, strategies that emerge in the periphery of companies, far removed from top management and planning units, are difficult to include. Yet they might be the most important ones. Different scenarios can be sketched later when strategic issues have become clearer. However, this very fact seemed to be the problem for Scanmeck Couplet. With hindsight it is quite easy to depict scenarios, but before the fact it is much more difficult. Another problem is of course how many scenarios to sketch; there is hardly time or resources to develop all possible outcomes. And the question still remains as to what to do with the scenarios once they have been depicted. Scenarios seem to be one of the better strategic analysis tools available to Scanmeck Couplet and other companies, but at the same time, as Mintzberg (1994, p.251) notes, "...the probabilities of getting everything right in scenario building do not seem to be high...".

Finally, one solution might be to reduce the strategic problem to an *organizational* one. The argument here is that the problem is not the strategy, but rather the organizational structure to develop and implement it (e.g. Bartlett and Ghoshal, 1989). Strategy is no problem once the proper structure exists, it is held, but for Scanmeck Couplet the strategy was not entirely clear. Organizational structure did

not seem to provide an adequate solution to their strategic challenges, especially not the third strategic issue, even if it could be part of the solution. It appears as if it is not entirely possible to reduce strategy to an organizational one and it seems as if various responses provided by literature on organizational structures have not always been successful in assisting managers, either.

2.5.4 Strategic Management - Normative and More Serious Fallacies

The overview concerning normative implications above was a quick and somewhat superficial evaluation of how *planning* and *analysis*, and a narrow selection of strategy methods, *intelligence*, *game theory*, *cognitive theories*, *scenario analysis* and *organizational* solutions to strategy might have assisted Scanmeck Couplet. Of course it is quite easy to be a "strategic management advice-and-fad basher," and there is already no shortage of criticism (Mintzberg, 1994; Mickletwait and Wooldridge, 1996; Pascale, 1990) and no particular need for another survey for this purpose.

Nevertheless, the overview provides some support for those opposing greater use of strategic management tools at Scanmeck Couplet, at least as regards the third strategic issue. In particular, it shows that the normative interpretations of strategic management focus on *rather well defined issues of yesterday rather than complex strategic questions for the future*. It is important to note that the criticism above concerns specifically the insufficiency of strategic management in addressing these kinds of strategic problems. Particularly on the third strategic issue facing Scanmeck Couplet, the non-mechanical systems issue, it does not seem evident that the strategic management approaches and tools available could have assisted the company. As noted in the introduction to this section, it must be acknowledged that several studies have found advantages in using strategic planning and strategic management tools. Strategic management models may be more relevant for well-defined strategic issues and of more limited value for issues involving complex foresight horizons and strategy creation.

The different normative approaches to strategy discussed above all require that the strategic questions and alternatives be more or less clear at the outset. The point of departure for *strategy analysis* and *planning* is existing markets and resource

positions. *Business intelligence systems*, in turn, are designed to gather information concerning given industries and resources. It is more or less self-evident where to look for alternative strategic positions and where to find information about them.

In *game theory* the strategic question and alternatives are similarly well-defined; the adversaries and even their strategic alternatives are already known. Regarding *cognitive-decision traps*, managers must be aware of rather well defined decisions and alternatives in order to apply the cognitive resolution. Even in *scenario analysis* some kind of framework, in terms of resources and industry, must be defined at the outset. Finally, in the case of *organizational structure*, it is evident that the strategy is rather clear from the start.

In summary, all these approaches to strategy are focused on strategic questions and alternatives which have been significant in the past but might not be for the future. They require that the fundamental strategic questions of *where to go* and *how to get there* be clear; even the strategic alternatives for answering them must be more or less clear in each model. These approaches seem to focus more on the present and past than on the future.

This fact can explain the skepticism of managers at Scanmeck Couplet and elsewhere towards using them. Scanmeck Couplet managers knew what to do about present problems, and for future ones the strategy models seemed to be of little help. It appears as if the strategic management models enumerated above, except perhaps for scenario analysis,¹³ are simply lagging behind. It might be said that the various strategic management models are in a "Catch 22" situation: When they are applicable they are more or less redundant, and when they are really needed they are of little use. It seems as if the *complexity* of strategic problems and their inherent *foresight horizon* are important factors in evaluating strategic management models and their normative implications.

The real challenge in an evaluation of strategic management theory is of course not to identify some general aspects of its normative interpretations, as above, that do not seem to withstand the test of practice when confronted with a particular case in a particular industry in a particular country. However, it appears as if

complexity and foresight horizon in fact appear to play a more important role in evaluating strategic management theory more generally. Ironically, strategic management theories and their normative implications seem only able to deal with issues of lesser importance for the future. The production question can be solved with existing management tools, but it really concerns operational actions in the present rather than strategic ones for the future. Strategic planning in terms of environmental and organizational analysis could provide answers regarding the second issue, globalization. However, the latter is oriented primarily toward the present and the past rather than the future, since it is based on an historical analysis of industry and resource factors. Furthermore, the answers provided by the analysis become more tentative as soon as the globalization issue is focused on the future and implementation becomes important. For the third question, which essentially concerns *strategy creation*, there seem to be no relevant models available.

Given the observations in this chapter, the central challenge is, first, to identify more precisely any erroneous aspects of strategic management theory perspectives and its normative interpretations and to determine in what particular way they seem inadequate. Second, and more importantly, the task is to provide an alternative if there are elements of prevailing strategic management theories that seem inappropriate. The first aspect has been briefly discussed in the prior section in terms of the principal strategic issues facing Scanneck Couplet and the foresight horizon and complexity of these issues. It is scrutinized more carefully in Chapters Five and Six in relation to a thorough evaluation of current strategic management theory. The remaining chapters deal with the second task.

2.6 Summary and Conclusions

Scanneck Couplet's three strategic issues exhibit various levels of complexity. The skeptics at Scanneck and Couplet believed that if the strategic issue was well defined, like the production issue, there would be no need for strategy models and if they were

¹³ In scenario analysis the strategic questions and alternatives are less defined, but on the other hand the method seems to consist more of an isolated one-time exercise of imagination and creativity than acts of strategic management.

too complex, like the non-mechanical system issue, they would not be of help anyway. A closer examination provided some support for their point of view.

The first issue facing Scanmeck Couplet, production, was unambiguous. The fundamental strategy questions of *where to go* and *how to get there* were clear, and so were the answers in terms of *strategy content* and *process*. In fact, the problem was purely one of operational management rather than a strategic issue. By contrast, for the third strategic issue, the potential non-mechanical system, there were no clear questions or answers at all. Not even defined as an "issue" to begin with and certainly not a "strategic" one until much later, this issue was totally ambiguous. Strategic management models did not seem to have much meaning or many implications for these two strategic issues.

The second strategic issue, globalization, was essentially clear like the first one, with one important exception, obstacles to implementation. The fundamental questions of strategy were clear, and Scanmeck Couplet knew what to do in terms of strategy content. Planning concerning competitive forces was also rather easy and was partly assisted by strategic management models, which thus did play a role in regard to this issue. In this sense the strategic management skeptics were wrong. The models helped in clarifying the competitive dynamics in the industry.

On the other hand, using these models was mostly an exercise in the present and the past rather than in the future, since the models analyzed historic and current industry conditions. In addition, the implementation process partly undermined the plans. Implementation and plans did not match; implementation or strategy process influenced and changed the plans and strategy content. Moreover, the strategy was basically one of following competitors and, hence, seemed to offer limited possibilities of above-average returns. In brief, the first issue could be characterized as a purely management and operational one, with a quite clear foresight horizon; the second had more strategic implications, with a less clear foresight horizon; only the third one truly had long-term strategic consequences, with an uncertain and ambiguous, or *complex*, foresight horizon.

The most important conclusion from the pilot study is not that the normative advice of strategic management could be questioned and did not appear entirely appropriate or meaningful for Scanmeck Couplet, especially concerning the third

strategic issue. A more serious tentative implication is that strategic management theories and perspectives might have some weaknesses in explaining strategy in complex foresight horizons and strategy creation. If correct, the brief analysis of the pilot case indicates that strategy-content theories, including industry and resource positioning, might be of limited relevance in explaining strategy creation. Strategy-process theories involving strategic planning and formulation, on the one hand, and strategy formation, including incremental revelation of strategies and environmental dictates, on the other, did not appear to provide entirely appropriate explanations, either. Once again, however, it must be acknowledged that the evaluation in this chapter has been far from exhaustive and that these are merely tentative implications to be examined more in-depth in the continued study.

To expect that strategic management theories should be able to explain strategy creation and strategies involving complex foresight horizons, and in particular to yield any normative advice, might be unreasonable. At the same time, *it appears as if the portrayal and explanation of complex and important questions for the long-term future of firms is a significant, even a core, element of strategic management.* The pilot study contributed to an understanding of strategic management practice, especially in regard to various categories of strategic considerations and complex foresight horizons. In particular, some of the characteristics of *strategy-creation* became clearer. The pilot study also provided some initial insights concerning the relationship between strategy content and strategy process. As expected, this first phase did not provide any definite constructs or conclusions, but it helped to focus and refine the research questions. The purpose of the rest of the study is specified below.

2.6.1 Specification of Purpose

The general purpose of the study is to *describe and examine how multinational companies develop and manage strategy-creation and to submit a proposal for a theory of strategy-creation.* More specifically, this empirical study of strategy-creation has four interrelated sub-purposes:

1. To evaluate the status of contemporary strategic management theories in regard to strategy-creation and strategy in complex foresight horizons.

2. In descriptive terms, to delineate the form and character of strategy-creation.
3. In exploratory terms, to identify and better understand origins, drivers, as well as barriers in regard to strategy-creation.
4. In more explanatory terms, to provide a tentative theory of the relationship between strategy process and strategy content in strategy-creation.

Strategy creation and the relationships between strategy process and strategy content are the focus of the subsequent investigation. The third strategic issue of Scanmeck Couplet, the non-mechanical system, is more thoroughly examined in Chapter Four. In Chapters Five and Six, theories of strategic management are exhaustively evaluated in relation to strategy creation in general and Scanmeck Couplet's third strategic issue in particular. First, however, the methodology for the continuation of the study is presented in the next chapter.

Chapter 3

RESEARCH DESIGN

3.1 Introduction

The two prior chapters established the subject of inquiry for the study. The first chapter highlighted two striking paradoxes in strategic management. They concerned what seemed to be an insufficiency of strategic-management perspectives and theories to address complex foresight horizons, and the role of peripheral sectors and actors, in strategy-making. In the second chapter two observations from the pilot study were emphasized. First, strategic issues involving complex foresight horizons and strategy-creation seemed to challenge strategic management theories. Second, connections between strategy content and strategy process appeared to play a more important role as the foresight horizon is extended and increases in complexity. Strategic management theories seem to be underdeveloped regarding this relationship as well. In addition, the second chapter established the focus and purpose of the study to follow. The focus is on *strategy creation* and the *relationships between strategy content and strategy process*. The general purpose of the study is to describe and examine how multinational companies develop and manage strategy-creation, and to develop a proposal for a theory of strategy-creation. In the current chapter the research design and methodological approach for the investigation of these issues will be presented.

Method is essentially the content of science and it is therefore necessary to address the research procedures and techniques explicitly. First, the study was undertaken on the assumption that it is possible to obtain some knowledge of the external world through scientific investigation.¹⁴ Second, interpretation and scientific

¹⁴ To many this remark may seem redundant, but some research perspectives strongly, and sometimes solely, emphasize the interpretive aim of social sciences. In the study of organizations some argue that there is no "out there" to investigate, rather only different interpretations of it; accordingly there are no universal laws of organizations. Structural factors like technology and other non-social variables are dismissed, as they do not suffice for understanding organizations. Criticizing a whole range of existing theories of organizations, these views emphasize the socio-cultural aspects of organizations (cf. Rose,

inference have both played an important role in this endeavour.¹⁵ Third, it was recognized that the knowledge obtained was uncertain¹⁶ and, finally, the research enterprise was an approximation of "scientific research."¹⁷

The research problem and purpose governed the choice of method and research design. It was noted earlier that strategic management is a relatively young and pre-paradigmatic field of research, particularly when it comes to strategy-creation and the relationship between strategy content and strategy process. Even though there are numerous studies of strategy process, the knowledge provided is quite fragmented and inconclusive as regards its relationship to strategy content and creation. Since the development of theory concerning strategy-creation and process - content relationships is at an early stage, the primary need is for a more thorough understanding of these basic phenomena. Consequently, the focus in this study was fundamentally on description, theory, and hypothesis-generation.

Given the state of knowledge on strategy-creation and strategy processes and their association with strategy content, it was difficult to formulate detailed questions about variables and causal relationships at an early stage. It was necessary first to explore the area in order to find important components and characteristics. Later, it

1985). In the context of culture studies, Geertz (1973, p. 5) even proposed analysis to be "not an experimental science in search of law but an interpretative one in search of meaning," and "operationalism as a methodological dogma never made much sense so far as the social sciences are concerned...it is largely dead now."

¹⁵ It is beyond the scope of this chapter and study to enter an in-depth discussion of philosophy of science and the character and existence of truth in terms of relativism, social constructivism, postmodernism, and other concepts of this kind. The epistemological question whether knowledge can ever be certain is at the core of the philosophy of science and is left to be discussed in that particular context. Nevertheless, the pragmatic position taken in the present study is consistent with King et al. (1994, p. 38, underlining added): "Any definition of science that does not include room for ideas regarding the generation of hypotheses is as foolish as an interpretive account that does not care about discovering truth" and "If we could understand human behavior only through *Verstehen*, we would never be able to falsify our descriptive hypotheses or provide evidence for them beyond experience. Our conclusions would never go beyond the status of untested hypotheses, and our interpretations would remain personal rather than scientific." Hence, interpretation does not have to be in opposition to a more positivist view of empirical research.

¹⁶ The preliminary and tentative character of scientific accounts is of course fundamental to the philosophy of science (e.g. Popper, 1968; Kuhn, 1962)

¹⁷ Naturally, there is no general "ideal scientific research" to pick from the shelf. The goal here has been to observe certain fundamental principles of scientific research design: 1) The goal is inference, 2) The procedures are public, 3) The conclusions are uncertain and 4) The content is the method (King et al., 1994, pp.7-9).

was possible to move towards development of concepts in order finally to reach the stage of theory- and hypothesis-generation. The general research process and the first phase of the study are discussed directly below. The research design and methodological specifics of the second phase of the study are treated in the remainder of the chapter.

3.2 The Research Process

The research process involved two phases of data collection, an exploratory pilot phase and a main phase, descriptive and explanatory, of theory generation. First an exploratory pilot study was conducted in order to focus the research questions, to establish relevant field questions, and to determine considerations important to the choice of method. In addition, the aim was to generate preliminary constructs and relationships to be used in the second phase. This first phase consisted of an in-depth, on-site, qualitative case study of strategic management in practice. It was conducted at a Swedish multinational company. A broad range of data was collected and compiled through participant observation, interviews, and secondary sources.

Based on the results of the first phase, various methods were considered for the main study. The choice was a *dual methodology* in which a longitudinal *single in-depth case* was combined with a *multiple retrospective case study* of the same phenomenon. This dual approach was intended to minimize the limitations and to maximize the benefits of a multiple-case and a single-case study design, respectively. The multiple-case study was based on studies of strategy processes at four different kinds of Swedish multinational companies. The single-case study consisted of a continued investigation that prolonged the relationship with the pilot-case company. Both studies were of a longitudinal character in terms of studying longer epochs of strategy processes (cf. Melin, 1992). Relevant literature was reviewed to a limited extent prior to the first phase¹⁸ and more thoroughly before and during the second phase. Below is a sketch of the research flow.

¹⁸ It was limited in order to avoid problems of "preunderstanding"(Glaser and Strauss, 1967), which were discussed in the previous chapter.

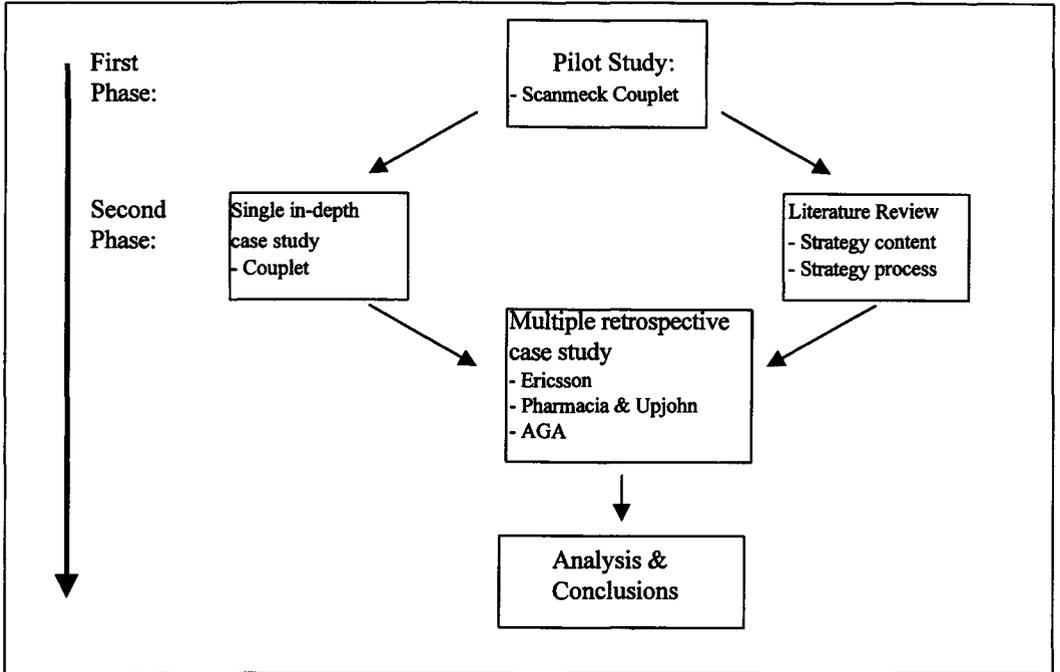


Figure 3.1: The research flow.

3.3 Phase One - The Pilot Study

The pilot study was based on Couplet, a Swedish MNC in the truck-trailer coupling industry. It consisted of a broad examination of strategic information gathering and analysis and strategic management practice in order to gain a more thorough understanding of strategy patterns. The overall objective of the pilot study was to obtain an in-depth knowledge of strategic management practice and to determine what distinguishes strategic issues involving complex foresight horizons. The aim was to develop an initial understanding of strategy development and of the relationship between strategy process and content (including the two fundamental questions of strategy "where to go" and "how to get there"). In addition, the inquiry covered

considerations concerning methods to be used subsequently in the second phase of the study. The specifics of the method used in the pilot study were reported in Chapter Two.

The pilot study in the first phase proved to be a fruitful way to explore strategic management analysis and information gathering and strategic management in practice, the relevance of strategic management theory and its advice regarding strategy development. An initial evaluation indicated that there might be some weaknesses in current strategic management theory. Contemporary theories did not seem to be entirely appropriate in explanatory or normative terms. Moreover, the first phase provided a better understanding of patterns of evolution in strategy, especially when complex foresight horizons and strategy creation are concerned. It also helped to determine what specific method to use in the second phase. Finally, the pilot study helped to define and refine the research questions for the subsequent study.

The next two chapters will be devoted to a further examination of contemporary strategic management theory in relation to strategy-creation and an investigation of its form and character. First, however, the methodology for the continued study will be discussed below.

3.4 Phase Two - A Qualitative Dual Method

Various methods were considered for the second phase. Some thought was given to a survey method or partial-survey approach.¹⁹ However, since it was not possible to establish any well defined constructs, causalities or other relationships based on the first phase or on prior research, this possibility had to be ruled out at an early stage. The pre-paradigmatic status of research regarding strategy process – content relationships in general and the research purpose of this study in particular, together with the experience

¹⁹ Initially a quantitative survey was partly developed as a means of at least strengthening any qualitative data and analysis. The reasoning was that quantitative data might indicate relationships and foundations for theories while the qualitative data would provide a deeper and more thorough understanding, thus strengthening the development of theory. This combination and synergy between qualitative and quantitative data is of course a common way of giving results added substance and has been suggested by several authors (Eisenhardt, 1989; Jick, 1979; Mintzberg, 1979b).

gained from the first phase, all indicated that the subsequent study should be qualitative.²⁰

Furthermore, there were other, related, reasons for a qualitative research design. First, the development of strategy over time, in which communication and interaction among groups and individuals are important, would be studied. In order to capture these process-related attributes, it would be essential to have direct contact with the people involved. Second, there are few studies focusing specifically on the connection between strategy process and content, and strategy creation. Therefore, it was difficult to know in advance the specific kind of constructs, causalities and other relationships on which to focus in this particular respect. Third, a lesson was drawn concerning the sensitivity of the subject of study in the first phase. Collecting information about strategies and the ways in which managers inform themselves about them proved to be a highly sensitive matter. Hence, it was quite doubtful that these issues could be captured in a survey-based approach. And even though the subject turned out to be less sensitive with the procedure that was followed, it was still in many instances a very delicate task to get the interviewee to speak openly about strategy creation.²¹

The specific research procedure chosen was a case-study approach.²² It is a suitable method for purposes of description and generating theories²³ (Eisenhardt,

²⁰ It is important to note that there is no substantial difference between qualitative and quantitative research; rather, the difference is one of style (King et al., pp. 4-6): "the differences between the quantitative and qualitative traditions are only stylistic and are methodologically and substantively unimportant. All good research can be understood - indeed, is best understood - to derive from some underlying logic of inference. Both quantitative and qualitative research can be systematic and scientific." and "neither quantitative nor qualitative research is superior to the other, regardless of the research problem being addressed."

²¹ The words of an executive at one headoffice as he was assured about his right to review the material, are illustrative: "Just make sure you do not write anything that might get me sacked!". In many other instances interviewees were highly intent on reviewing the report in order to detect any sensitive matters.

²² Yin (1989, p.23) defines a case study as an empirical inquiry that:
- investigates a contemporary phenomenon within its real-life context; when
- the boundaries between phenomenon and context are not clearly evident; and in which
- multiple sources of evidence are used".

²³ However, it is important to observe that case-study research can be used to provide description and to test theory besides generating theory (Eisenhardt, 1989). Both qualitative and quantitative forms are useful for both verification and generation of theory (Glaser and Strauss, 1967, pp. 17-18). Note also that it is not

1989) and it is the most appropriate one for the present purpose, since questions of *how* and *why* are under consideration (Yin, 1989). This qualitative case-study approach included methods and techniques²⁴ which had been used in the first phase, but for more descriptive and explanatory purposes in this phase. The choice of the method used was guided by writings on grounded theory (Glaser and Strauss, 1967; Glaser, 1978; Strauss and Corbin, 1990), case study design (Yin, 1989; Yin 1993), qualitative data-analysis techniques (Miles and Huberman, 1994), scientific inference in qualitative research (King et al., 1994) and Eisenhardt's (1989) guidelines for developing theories from case studies.²⁵

Qualitative methods and case studies have been criticized on a number of accounts. They have been dismissed as unreliable and anecdotal: "cannot be expected to transcend story-telling" and "a mysterious, half-formulated art" (Miles, 1979, p. 600 and 593). The weaknesses and problems of qualitative methods were recognized in the study, and measures were taken to limit them. Special effort was devoted to the analysis portion of the study. For those dismissing qualitative and case data altogether, Simon's (1991, p. 128) comment regarding concerns about the imprecision of case studies as research data is illustrative: "...we can console ourselves by noting that a man named Darwin was able to write a very persuasive (perhaps even correct) book on the origin of species on the basis of a study of the Galapagos Islands and a few other cases. To the best of my recollection, there are no statistics in Darwin's book."

Besides the writings mentioned above, Pettigrew's (1985b, 1987b, 1990) contextualist approach to research on change in strategy was of importance. His emphasis on the integration of *content*, *contexts* (inner and outer) and *process* of

qualitative documentation which distinguishes case studies from other research strategies. Case studies can be of a quantitative character (Yin, 1989).

²⁴ As noted earlier, qualitative studies and their inherent techniques are recognized and accepted in broad areas of social science for purposes of developing theory and need no detailed presentation (cf. Wolcott, 1990).

²⁵ Considerable support for the use of case-study research is to be found in the debate on methodology in strategic management. Several scholars have encouraged pluralism and the use of various methods, in addition to traditional cross-sectional/statistical methods (Bowman, 1990; Daft and Buenger, 1990; Hambrick, 1990) and, in particular, the use of qualitative case studies (Bettis, 1991; Daft and Lewin, 1990). The choice of a qualitative case method is also consistent with many international (e.g. Mintzberg, Raisinghani and Théoret, 1976; Mintzberg and McHugh, 1985; Pettigrew, 1987; Whipp, Rosenfield, Pettigrew, 1989) as well as recent Swedish studies on strategy development (e.g. Eneroth, 1997; Melander 1997; Stein 1993; Åkesson, 1997).

strategic change was recognized. The focus of his approach is on a multilevel analysis, including the societal as well as the firm level, a pivotal factor being the identification of interactions between levels over time (Pettigrew, 1985b; 1987b). Another important factor in Pettigrew's approach is to analyze the interconnectedness between the past, present and future. The emphasis on an integrative analysis of strategy content and process is especially relevant in this study since the process - content relationship is a primary focus.

The principal goal of the study was to be descriptive, with the added ambition of providing preliminary explanations. Hence, the study would involve not only description, but descriptive inference,²⁶ which entails an interactive relationship between description and explanation.²⁷ The fact that inference was emphasized did not exclude the role of interpretation in trying to develop theory. On the contrary, interpretation played an integrative and important role in gaining a better understanding of the generation of hypotheses. This experience is consistent with the discussion by King et al. (1994, p.36) of interpretation and inference: "science... and interpretation are *not* fundamentally different endeavors aimed at divergent goals." In comparison with some of the literature on qualitative methods (e.g. Geertz,1973; Strauss, 1987; Van Maanen, 1988), the emphasis was on *both* interpretation *and* inference, not solely the former. The research process was an inductive one of developing generalizable theory; it involved no contradiction between interpretation and scientific inference.

In terms of pre-understanding, the task was a delicate one of trying to balance between not using preconceived concepts and theories, on the one hand, and defining

²⁶ King et al. (1994, p. 34) explain some fundamental aspects of scientific description: "One is that it involves inference: part of the descriptive task is to infer information about unobserved facts from the facts we have observed. Another aspect involves distinguishing between that which is systematic about observed facts and that which is non-systematic"

²⁷ See King et al. (1994, p. 34) chapter 2: "We can not construct meaningful causal explanations without good description; description, in turn, loses most of its interest unless linked to some causal relationships. Description often comes first; it is hard to develop explanations before we know something about the world and what needs to be explained on the basis of what characteristics. But the relationship between description and explanation is interactive. Sometimes our explanations lead us to look for descriptions of different parts of the world; conversely, our descriptions may lead to new causal explanations."

the research questions and constructs at an early stage, on the other.²⁸ The study began with the pilot case of strategic management practice at Scanmeck Couplet, very much in the tradition of Glaser and Strauss (1967) with few preconceived views of theoretical explanations. Research questions were then focused and preliminary constructs specified on the basis of the pilot study and the experience of others obtained through a comprehensive review of relevant literature. This approach, however, did not mean that the original specific research questions and a priori understanding were retained under all circumstances during phase two. The research concepts and questions were regarded as provisional and, under the influence of "theoretical sensitivity,"²⁹ were partly changed if required.

3.4.1 The Design of the Case Study

Various alternatives were considered for the case-study design. One was to maintain an intensive, in-depth approach and continue to examine the pilot-case company as a single-case study. The strongest argument for choosing that technique was the process character of the research focus and the indeterminate nature of the causal relationships. However, initially it was unclear whether one case would provide enough material to be regarded as a complete study on its own. In addition, it was concluded that this method would be too risky and ineffective.³⁰

Another possibility considered was to use several retrospective cases. The fact that the research issues had proven to be very sensitive supported this approach. Using retrospective cases would avoid the sensitivity concerning current strategic issues.

²⁸ Eisenhardt (1989) provides some useful recommendations for balancing the dual requirements of the researcher: remaining unbiased by existing theory, but possessing an a priori understanding of the research problem. Her advice - to formulate constructs based on the literature early on, but not to tie the research to any specific relationships or hypotheses - was followed here.

²⁹ "Theoretical sensitivity" is derived from familiarity with relevant literature, professional experience and personal experience, and is part of the scientific method of grounded theory (Glaser, 1978). It refers to the researcher's sensitivity regarding the meaning of data, capacity to understand, insight, and ability to separate the relevant from the non-relevant (Strauss and Corbin, 1990).

³⁰ It later became clear that it would have fulfilled the criteria of at least a "revelatory" case (Yin, 1984, pp. 47-49) since it provided uniquely close access to the very sensitive matters involved in a strategy-creation process. On the other hand, it also proved risky, as the primary supporter of the study later left the company and, in addition, the company underwent a major merger.

This alternative would also allow for comparison between cases. The danger, though, was that more detailed patterns of the strategy processes might be missed.

The final decision was to adopt a *dual methodology* that combined an *in-depth single-case* with a *retrospective multiple-case study* of the same phenomenon. This approach has compensatory merits. Moreover, it provided a clearer conceptual framework and the possibility that explanations would emerge as the focus shifted from the single case to the multiple cases. Leonard-Barton (1990)³¹ describes a dual methodology, noting that whereas case studies generally are suited for exploratory and hypothesis generation, the dual methodology is particularly relevant for these purposes and especially for studying processes.³²

Through the in-depth single-case study, detailed patterns of the strategy creation were investigated. The major advantage of using this more real-time case was that the issue of strategy creation could be more specifically examined and would enable the researcher to track causes and effects. The multiple-case study design lowered the risk of observer bias and augmented external validity compared to the single in-depth case. In addition, a multiple-case study is generally considered more compelling and robust than single-case studies, according to Yin (1989). On the other hand, the multiple-case study was less likely to offer the same possibilities as the single case for recognizing detailed patterns and establishing cause-and-effect relationships. Leonard-Barton (1990) points out that the specific strengths of each method compensate for the weaknesses of the other and mentions three specific aspects of the data-gathering process in which the methodologies have compensatory strengths: *efficiency*, *objectivity* and *pattern recognition*.

The in-depth single-case study initially, in the first phase, involved spending whole working days at the company, besides participation in specific meetings and other events. Thus, *efficiency* was sacrificed for richness of data, as this method was extremely time-consuming. In addition, much of the registered data relating to non-

³¹ Leonard-Barton (1990), in a study on implementation of technical innovations, used this dual methodology to examine the generality of findings from a single longitudinal case study by examining whether similar findings were presented by other cases studied retrospectively.

³² Leonard-Barton (1990, p.263): "It also seems particularly suited to studying *process* because of the opportunities for exploring dynamics both as historical patterns in the retrospective studies and as evolving patterns in the real-time study."

critical events turned out to be unusable.³³ The multiple-case studies, on the other hand, were relatively efficient, with a more focused approach to data collection. In regard to *objectivity*, the researcher would be more likely to develop unconscious biases in a more real-time single-case study than in a retrospective multiple-case study. Finally, *pattern recognition* refers to the kind of patterns that can be revealed with each method. The multiple cases offered a study of overall process patterns from a more macro perspective. The single-case study, on the other hand, offered the researcher the opportunity for microscopic examination of patterns in strategy creation. This scrutiny of details would provided a foundation for a more thorough comprehension of the different elements of strategy-creation processes, as well as an understanding of the diverse forces that drove these processes. In other words, the multiple retrospective studies increased the external validity of the research design, whereas the in-depth, single-case study enhanced its internal validity.

3.4.3 Selection Procedures

The fundamental consideration in the sampling was not statistical,³⁴ but theoretical, in that it was guided by concepts of theoretical relevance to the development of theory. Strategy-creation processes indicative of certain categories of concepts relevant to the evolving model and hypotheses, and of properties related to these concepts, were selected. Resort was made to "theoretical sampling", developed in the area of grounded theory (Glaser and Strauss, 1967; Glaser, 1978; Strauss and Corbin, 1990).³⁵

³³ Hence, participant-observation was not used in the second phase since the technique proved to be ineffective. In addition, two factors outside the researcher's control reduced the extent of interaction with the company; as mentioned earlier, these were the contact person's resignation and a merger.

³⁴ According to King et al. (1994, pp.125-127) random selection in qualitative research is often not feasible and might not be appropriate even if it is possible, as it can cause serious biases in small-*n* research. Informed selection is often better. However it is important to note that "abandoning randomness opens the door to many sources of bias".

³⁵ *Theoretical sampling* is defined as "sampling on the basis of concepts that have proven theoretical relevance to the evolving theory." (Strauss and Corbin 1990, p.176). Eisenhardt (1989, p. 537) observes that "the goal of theoretical sampling is to choose cases which are likely to replicate or extend the emergent theory". Theoretical sampling is related to another sampling technique in qualitative studies, *selective sampling*, which refers to sampling a specific area in an *a priori* reasonable set of dimensions (e.g. time, space). This latter technique is somewhat similar to the method used in the present study, as some criteria for the strategy-creation issue are defined *a priori*. However, no particular sub-units have

In order to increase generalizability, the firms and strategy-creation issues were intentionally selected in order to alter the context of each. Three heuristics were used to select strategy-creation issues for this purpose of generalizability. One was to seek industries with different characteristics, from chemical processes to telecommunication and information technology and from sub-supplier industries to OEMs. Another heuristic was to choose strategies involving either a new technology or a new market or both. Finally, the companies varied in size and stage of development.³⁶

In the single-case study the focus on the pilot-case company was continued, though now with more refined constructs and research questions. The reason for selecting this single case was that a good working relationship had already been built up between the researcher and the company, a consideration of crucial importance, as it would have required considerable effort and time to develop such a relationship at another company. Furthermore, observations at that company had already started, so that a more longitudinal understanding would be obtained if the company remained in focus.³⁷

Six selection criteria were used to *identify relevant strategy-creation issues* in the multiple-case study. They were based on the first phase of the study and the subsequently specified research purpose and questions. The selection criteria were as follows: First, the issue had to be a strategic one at an MNE of substantial size, since complex international companies and strategy creation issues were to be studied. Second, strong assistance from a supporter inside the company and assured access to

been specified in advance. Glaser (1978) prefers to distinguish between these two sampling techniques, arguing that in theoretical sampling one cannot know in advance precisely what to sample for and where the procedure will lead.

³⁶ Essentially all categories in Bartlett and Ghoshal's (1989) typology of MNEs were included: multinational, global, international, and transnational.

³⁷ Yin (1993, p. 6) observes a problem in using exploratory case studies as part of a subsequent "real" study. His main concern, however, seems to be that new sites and fresh data be included and that a "real" study actually be conducted. In this study the second phase involved a new research design and additional sources. Hence, Yin's (1993) point does not seem directly applicable. However, there is another, more relevant issue for this study. Since part of the pilot case is used in the second phase, the same data is used to assist in the determination of a research focus and the generation of initial constructs, and then later to develop theory. This matter has been considered in the analysis and in drawing conclusions, and although the aim is to find new theory, the study is very cautious about claiming that the theory has been *tested* (in which case the inclusion of the single-case in the second phase would have been more serious).

various levels of the company was necessary because of the delicate nature of strategy-creation issues. Third, the strategic issue had to involve a considerable change from prior strategies, since strategy-creation or fundamental strategic changes were to be studied.³⁸ Fourth, the strategy should preferably have evolved within the last ten years since it had to be neither too old nor too recent in order to avoid problems of hindsight-rationalization and sensitivity, respectively. Hence, the reason for the selection of strategies from the last ten years was that the strategy process under investigation should not be too old, as respondents tend to forget and rationalize using hindsight, and "corporate memory" fades away and becomes distorted. On the other hand, overly recent strategies would lead to considerable problems in terms of sensitivity, as discovered in the pilot study. Fifth, the strategy process and the MNE had to fall into one of the categories determined by the three heuristics outlined above in order to increase generalizability. Finally, convenience and accessibility played a role in the selection process as well. For example, these factors limited the focus to Swedish MNEs only, a weakness since a comparison with MNEs based in other countries would have strengthened the results. On the other hand, restricting the study to Swedish MNEs made it possible to hold some national and cultural variables constant.

Five strategy processes were finally selected after discussions with the senior director of public relations or equivalent at each company. Several strategy processes and MNEs were considered and investigated. Preliminary discussions and even interviews were conducted at some companies that were not subsequently selected since they did not fulfill the selection criteria. Apart from the single in-depth study of the development of non-mechanical system and trailer surveillance systems at Couplet, and the company's entry into those businesses, the strategy-creation issues selected were the following: Ericsson's entry into mobile telephony communications systems and creation of a mobile telephony business, Pharmacia & Upjohn's entry into smoking-cessation products and creation of a consumer healthcare business and

³⁸ The strategy processes were selected to correspond to at least one of Schumpeter's (1942, pp. 83-84) entrepreneurial roles in creating fundamental competition and creative destruction: "the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization" and "the new commodity, the new technology, the new source of supply, the new type of organization".

AGA's entry into Eastern Europe and creation of an Eastern European industrial gas business.

The beginning of each strategy process was defined as the point when the strategic issue first arose at the company, and the end, when implementation was done or well under way. The main focus, however, was on the strategy-creation process and not on the final strategic corporate change. Of course, these are interdependent subjects and the latter is partly covered in the study as indicated in Chapter 1. There are no simple answers to the question of when to start and stop collecting data in a continuous process. Pettigrew's (1990) suggestion that pragmatic considerations such as the research theme, empirical setting, theoretical framework, access, and funding have to play a role, guided the definition of beginning and end. In interviews, interviewees were allowed to define their own perception of the process, including its beginning and end, but were asked about other parts if relevant.³⁹ See Table 3:1 for the time frame investigated in each case.

Variation in context in order to increase generalizability and "theoretical saturation"⁴⁰ guided the number of cases to be included in the multiple retrospective case design.⁴¹ Furthermore, the aim was to penetrate deeply the complexity of strategy-creation questions. Thus, given time and resource restrictions, the multiple retrospective case study includes three cases. Below is an overview of the different cases in terms of company, industry and strategy creation process, in addition to the number of interviews and their average duration and the time frame investigated (Table 3:1).

³⁹ Using a process as the unit of analysis can be a problem, as there might be variations in defining the process depending upon the perceptions of different actors; in addition, process components might have existed prior to the first manifestation of the process (Yin, 1989).

⁴⁰ In general more data are better than less in statistical sampling, but in "theoretical sampling" an increased sample size could be highly inefficient in that information is added to "full" categories while no information is generated for categories yet to be filled. The ideal criterion for when to stop sampling is the *theoretical saturation*, of each category, meaning that when the marginal contribution or utility of each additional case is diminishing the researcher can stop adding cases (Glaser and Strauss, 1967).

⁴¹ In addition, as discussed earlier, other factors played a role as well: Eisenhardt (1989) points to the fact that in practice "theoretical saturation" has to be combined with pragmatic considerations such as time and money; often the number of cases are planned in advance and she remarks that a number between 4-10 usually works well. Pettigrew (1990) notes that there is no absolute answer to the question of number of cases and that an *n* of one can be adequate if justified by the characteristics of the case.

<i>Company</i>	<i>Industry</i>	<i>Sales MUSD (1998)</i>	<i>Employees (1998)</i>	<i>Number of Markets</i>	<i>Area of Strategy Creation</i>	<i>Interviews</i>	<i>Average duration interv.</i>	<i>Time frame examined</i>
Ericsson	Telecommunication equipment	22,843 ⁴²	103,667	140	Mobile Telephony/ Mobile Communic. Systems	22	120 min	1978-1998
Pharmacia & Upjohn	Pharmaceuticals	6,758	30,000	> 100	Consumer Health care/ Smoking Cessation	16	100 min	1978-1998
Couplet	Truck-trailer coupling	5,234	31,000	42	Trailer surveillance systems/ Electro-hydraulic systems	15 ⁴³	105 min	1988-1998
AGA	Industrial Gas Industry	1,895	10,203	38	Eastern European Business/ Eastern Europe	5	110 min	1988-1998

Table 3.1: Overview of cases, the number of interviews and their average duration and the time frame investigated

3.4.2 The Empirical Inquiry

Interviews were conducted with managers, in different company sections and on different organizational levels, who were involved in the strategy-creation processes (see List of Interviews, Appendix B). Secondary data was gathered from a variety of sources both internally in the companies and from public documents and archival records. In total, 58 interviews were made (see Table 3.1) in addition to interviews, conversations and discussions through participant-observation in the single in-depth case. The selection of the interviewees was made on the basis of including key figures involved in the strategy-creation processes and “snowball” sampling. All managers agreed to be interviewed except in four cases.

⁴² 184,438MSEK (The figure has been converted into USD. The exchange rate as of December 31, 1998, USD 1 = SEK 8.0740, has been used).

⁴³ The single in-depth study was based on participant observation, interviews and examinations of internal strategy and strategy-related documents. Interviews were conducted prior, during and after participant observation. Besides this other, more informal interviews, conversations and discussions were performed during participant observation.

The average total interview time was approximately 100 hours and the average length was approximately one hour and fifty minutes. An interview guide was used during the interviews (reproduced in Appendix A). The initial questions regarding each strategy creation process were general in order to get the interviewee to speak freely about the topic. Relevant factors in the interview guide not addressed by the interviewee were then specifically asked about. In accordance with this technique the interviews did not strictly follow the sequential format of the interview guide. The interviews, thus, followed a semi-structured character. In addition, common interview considerations and tactics were used (e.g. Douglas, 1985). The interviews took place at the interviewees' offices except in two cases.

Interviews were generally taped. The interviewee was asked if they approved of the use of a tape recorder and they were also assured the possibility to read and agree to any citations used in the final report in order to limit defensive and avoiding respondents. Minutes were taken during the interviews to complement the recordings. All interviews were transcribed from the tape recordings. There were, however, some exceptions to the use of tape recorder. First, the interviews regarding Ericsson's outer context were conducted together with research colleagues in the course of a related research project and were not taped (see List of Interviews, Appendix B). Secondly, in four other cases, due to the sensitivity of the matters under investigation it was out of the question to use a tape recorder. In those cases, either the interviewee requested that the interview would not be taped, or it was strongly sensed that taping would not be appropriate. Hence, when it was clear that the recording might influence the interviewees' willingness to respond, a tape recorder was not used. Even among those interviewees being taped, some insisted that their views and quotes were "off the record," "not to be considered official" or "not to be mentioned in the report".

After the interviewees reviewed quotes, some statements were revised and some were eliminated. Requests by the interviewees to revise or eliminate quotes of others (which happened on several occasions) was not, however, allowed. The reviews of the interviewees' own quotes did not lead to any major changes in the content of what was reported. In one of the cases, however, reviews had an impact on the description of the case. This made that particular case weaker compared to the others,

but rather than making the case anonymous it was kept intact with company and interviewee names included.

The parts and quotes eliminated in the cases primarily concerned points of views regarding the strategic issue and unit in question. Examples are elaborations regarding the rationale of the strategic issues, whether it was wise to continue investing in them and a potential divestment of them (e.g. “there were other, more promising strategic issues”, “it could have been sold”) and issues relating to the degree of conflict involved (e.g. “it was like the Wild West”, “we worked undercover and sneaked with the project”, “during those years it was like trench warfare”). The inclusion of the eliminated parts and quotes would have strengthened the impression of diversity in strategy views and in strategy processes, including cognitive interpretations and organizational learning patterns.

The fact that the views of the strategic issues proved to be such a sensitive matter and that the organizational memories, representations, goals and knowledge in general differed significantly between different respondents had implications for the write up and analysis of the cases. The results of the empirical inquiry are presented as descriptions of the cases in *three different versions*. The first one is a “clean” and neutral version where companies, industries, internal and external contexts and the fundamental strategy-creation processes are described without any quotations used (Chapter 7). Later two sub-strategy processes are fully described more in detail compared to the first version and including quotes from interviewees (Chapter 9 and 10). The processes represent different views and learning patterns regarding the strategy creation issues. The particulars of them is specified in full case descriptions, rather than merely in brief tables of summaries in order to better illustrate their inherent strategy logic and the various types of patterns and learning involved. The intention of this approach was to provide *careful case studies* in order to uncover in-depth variations in strategy processes and learning. Careful case studies, especially as relates to organizational learning and interpretation, have been recommended by Simon (1991, p. 133): “By ‘careful,’ I mean studies that explore the contents of important organizational memories, the ways in which those contents are accessed (or ignored) in the decision making process, and the ways in which they are acquired by organizations and transmitted from one part of an organization to another... perhaps

the most important are the representation of the organization itself and its goals, for it is this representation (or representations, if it is not uniform throughout the organization) that provides the basis for defining the roles of organization members.”

3.4.4 Unit of Analysis

It follows implicitly from the research problem that a specific *strategy-creation process* was the primary unit of analysis.⁴⁴ However, there was an obvious problem regarding the relationship to other strategy processes and processes in general. A delicate balance had to be maintained between focusing on the specific strategic issue in question and at the same time allowing data on potential influences outside the specific process to be collected and analyzed. Thus, attention was given to sub-units within the strategic issue and to different processes and groupings that were concerned by the specific strategic issue under consideration. Yin (1989) refers to this approach as an "embedded case study" - a case study involving more than one unit of analysis. Hence, the primary unit of analysis, the strategy-creation process, was subsequently specified during the research process.

Two sub-units within the strategy-creation processes were identified as important for its outcome after the analysis of the single in-depth case study and the initial analysis of the multiple retrospective case study: first, subordinate internal processes of strategy creation and, second, various ways of assimilating knowledge, or organizational learning, associated with the strategy-creation process.

Since the case study was an embedded one, several units of analysis were involved, and the number of observations differed depended on the unit of analysis. In terms of number of observations, *n*, this study can be argued to involve not only *four* observations of companies and contexts, as well as *four* processes of strategy creation, but also *eight* internal sub-strategy processes and an *indefinite* number of instances of learning.

⁴⁴ In the traditional case study, a "case" may be an individual or an organization. However, it might as well be an event which is less well defined: "Although units of analysis are typically defined as individuals, groups, or organizations, they could be almost any activity, process, feature, or dimension of organized behavior" (McClintock, Brannon and Maynard-Moody, 1979, p.612).

In sum, the different units of analysis involved were the strategy-creation process, subordinate strategy processes and mechanisms for organizational learning. Later these were further clarified as *strategy process*, *internal strategy motors* and various *knowledge assimilation practices* within the strategy motors respectively. It is important to note that the number of observations differs depending on which unit of analysis is studied.

3.4.5 Triangulation

The dual methodology presented above is a triangulated methodology in which different types of data are used as cross-checks. The basic feature of triangulation, or multimethod, approaches is that two or more methods are applied to the same research problem.⁴⁵ This study made use of triangulation on three different levels. First, it was based on a "*separate-method*" approach manifested in the combined single-case and multiple-case dual method outlined above. The focus was on strategy creation and organizational learning mechanisms in both instances, but the method varied. Second, a "*between-method*" triangulation⁴⁶, representing the use of multiple modes of data collection (e.g. multiple methods: interviews, observation, documentary/archive data etc.), was used both in the single-case and the multiple-case approach. Third, a "*within-method*" triangulation approach was included; basically it involved the use of multiple techniques and sources (e.g. multiple sources: reports, memos, minutes, letters, manuals, instructions, etc.) within a given method to collect and interpret data.⁴⁷

The fundamental feature of the triangulation was that multiple methods and sources of evidence were used to examine the same dimension of the research questions for the purpose of strengthening construct validity.⁴⁸ Another approach taken

⁴⁵ The intention is to provide stronger substantiation of constructs and hypotheses, the same rationale as in hypothesis-testing research (Eisenhardt, 1989). According to Yin (1989) the unique strength of the case study is specifically its capacity to use a vast variety of evidence.

⁴⁶ Jick (1979) in citing Denzin (1978) suggests a continuum of triangulation design ranging from simple (e.g. "within-method") to more complex designs (e.g. "between-method").

⁴⁷ Several important advantages were provided by triangulation: the researcher became more confident in the results, and it helped in uncovering deviant dimensions and in integrating theory (cf. Jick, 1979).

⁴⁸ It is important to note that triangulation in itself does not automatically provide a better result; it has

to increase construct validity was to have participants review the case studies (cf. Yin, 1989).

3.5 Prediction and Causality

3.5.1 Literal Replications

The multiple cases were considered as multiple *experiments* and not multiple respondents; in Yin's (1989) words a *replication logic* was followed, as opposed to a sampling logic. Thus, any theoretical proposition was examined for each case and not for the aggregate of cases (Eisenhardt, 1989). The cases, like experiments, were generalizable to theoretical propositions and not to populations (Yin, 1989). The goal was to expand and generalize theories; thus, if several cases were shown to support the same theory, replication could be claimed.⁴⁹ The choice here was a methodology including "literal replication", cases that predict similar results (i.e. several cases of the same kind; cf. Yin 1989). This procedure in the multiple retrospective case study includes identification of common characteristics of research circumstances and predicting similar results. Hence, similar properties in regard to strategy contexts, process and sub-processes were identified and specified in the different cases. The aim is to enhance external validity of the research design. Naturally, another device to evaluate the cases in the process of iteration between data analysis and theory generation was to consult existing literature.⁵⁰

Besides the literal replication, a closer examination of strategy-creation within cases was made. Basically four different aspects of strategy-creation were investigated as previously discussed in terms of different levels of analysis: first, strategy process,

to be justified given the context of the research and research question. Jick (1979) warns that if the research is not clearly focused, all the methods in the world will not help. For example, triangulation in order to legitimate a personally preferred method reduces other methods to mere window-dressing. Citing Denzin (1978, pp.301-302), Jick (1979, p.603) notes that researchers might be deceived in "that five different variations of the same method generate five distinct varieties of the same method. But the flaws that arose using one method remain".

⁴⁹ Yin (1989) distinguishes between this *analytic generalization*, achieved in case-study research, generalizing a set of results to some broader theory, and *statistical generalization* in surveys.

⁵⁰ As noted earlier, a comprehensive literature review was carried out during the second phase. Of course, and as recommended by Eisenhardt (1989), both literature which conflicted with the emergent theory and similar findings were used in order to increase generalizability and internal validity, respectively.

the general type of strategy-creation process generated in each company; second, the characteristics and context of strategy sub-processes; third, organizational learning, the types of learning practices used within each strategy sub-process; fourth, strategy-process knowledge, the character of knowledge generated by various learning practices.

3.5.2 Causal Inference

The primary goal of the study has been set out to be descriptive, but with explanatory ambitions. A difficult problem in qualitative case-study research involving processes is the nature of causation. Because of the limited understanding of strategy-creation and the relationships between strategy process and strategy content, the main concern was not with issues of causation at the outset.

However, in the course of the study, the aim was to reveal causal patterns and sequences which could indicate certain explanations and eliminate others which did not match the patterns. In this sense, causal inference was a process in which, over time, approximations were made continuously in order to identify increasingly accurate causal inference. This feature did not mean, though, that the study was entirely explanatory or that specific variables which cause other specific variables were identified. Rather, descriptive inference was used as a basis for clarifying causal relationships. In this sense, description and explanation were regarded as interactive processes.⁵¹

It is quite doubtful that there is any such thing as proof of one social phenomenon causing another. First, regarding causation, the number of contextual variables involved poses insurmountable challenges to determining causation in strategy-creation processes. It could be argued that the nature of strategy-creation processes is much too complex to be explained simply in terms of cause and effect. Furthermore, there is a possibility that the phenomenon studied in this myriad of variables has several causes, i.e. that there is "multiple causation". Indeed, Pettigrew

⁵¹ As noted earlier, this statement relates to King et al.'s (1994, p. 34) reasoning: "We can not construct meaningful causal explanations without good description; description, in turn, loses most of its interest unless linked to some causal relationships."

(1990) points out that causation in contextualist and strategy-process research is neither linear or singular; changes have multiple causes and are probably better explained by loops than by lines.

Also, causation can never be established with certainty, no matter what efforts are made to do so.⁵² In this study, it would be necessary to return to the strategy-creation issues and to conduct a with-and-without analysis of all conceivable influential variables in order - if possible - to determine any causal effects. Hence, causal effects will not be established with certainty in this study (or in others).⁵³

The exacting challenge of causation can essentially be met with three possible tactics. One is to argue unreservedly for explicit causation no matter how indeterminate the nature of the study and the research design on which it is based. Another is to be extremely cautious, denying that causation is being studied at all, and instead to focus on "interpretation," for example. A third is to be adequately bold regarding causation, depending on the research design, and carefully to outline the limitations and uncertainty surrounding the inference.

The explanatory ambition of this study is primarily based on the third tactic. While the study falls short of thoroughly explaining causation concerning the nature of strategy-creation processes, it should be remembered that these processes are extremely complex and that there are significant problems in examining them. In this context, it is never possible to be sure that one event precedes another in a causal relationship, but it is possible to determine approximate subjective probabilities which represent how reasonable it is to think that one causes the other (cf. Zaltman et al., 1982).⁵⁴

⁵² King et. al. (1994, p.79): "no matter how perfect the research design, no matter how much data we collect, no matter how perceptive the observers, no matter how diligent the research assistants, and no matter how much experimental control we have, we will never know a causal inference for certain"

⁵³ We concur with the perspective presented by Zaltman et al. (1982, p. 53), who cite Kenny (1979, p. 2): "Modern epistemology tells us that proof is a good that is never achieved by social scientists or any scientists for that matter. As the ancient Hebrews felt about their God, the scientists should never speak the words truth or proof but always keep them in mind."

⁵⁴ The point of view taken by Zaltman et al. (1982, p. 48 and 55) in their discussion on causality in marketing research seems reasonable: "Causality is an assumption or an inference rather than a verifiable phenomenon." and "Making causality explicit is...important in clarifying our thinking about events of importance. Knowing that variables are related or associated with each other is essential. Going beyond this level and investigating *how* they are related adds significantly to the utility of the results..."

3.6 Quality Appraisal

There are basically four critical tests which the research design and procedure must meet (Yin 1989): construct validity, internal validity, external validity and reliability.⁵⁵ These criteria have been referred to earlier in judging the research design, data collection, and data analysis.

The synergy gained through the complementary approaches of the dual methodology enhances *external*, *construct*, and *internal validity* (cf. Leonard-Barton, 1990). Other measures taken to increase *construct validity* were different forms of triangulation and having participants review the case studies. In order to strengthen *internal validity* further, the pilot study was extended and different forms of pattern-matching activities were conducted. *External validity* was increased through the multiple-case design and in-between triangulation, as well as by other steps. It was previously established that different kinds of replications were used to improve analytic generalizability.⁵⁶ A variety of strategy-creation processes and types of MNCs were included to provide generalization. Regarding *reliability*, the research procedure was carefully reported and documented.⁵⁷ As earlier outlined an interview guide was used, the interviews were recorded (except in four cases), the recordings

⁵⁵ These tests have been summarized in a number of books and articles. However, validity has been widely discussed and the definitions vary in different texts. Therefore we present the meaning of the tests that we have chosen based on Yin (1989, pp. 40-41), and in turn on Kidder (1981, pp. 7-8):

Construct validity: establishing correct operational measures for the concepts being studied;

Internal validity (for explanatory and causal studies): establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships;

External validity: establishing the domain to which the findings of a study can be generalized;

Reliability: demonstrating that the operations of a study - such as the data-collection procedures - can be repeated with the same results.

Internal validity for case studies also includes: the specification of the units of analysis, the development of rival *a priori* theories, and the collection and analysis of data to test these theories. (Yin, 1993, p.40).

⁵⁶ In analytical generalizability the researcher strives to generalize a set of results to some broader theory (Yin 1989, pp.43-44).

⁵⁷ Regarding reliability the emphasis is on making sure that if another researcher conducted exactly the *same* case study (not another, replicated case) over again the researcher should come to the same conclusions, thus, the way the study is conducted should be independent of the investigator. Yin (1989) notes that a prerequisite for allowing other investigators to repeat the study and to judge the reliability is to document the procedure through different actions (e.g. case study reports: case study protocol, case database, etc.). This has been the ambition in order to increase the reliability of the study.

were transcribed and minutes were taken as complement to the recordings. Both primary and secondary data was described and analyzed in various formats.

3.7 Summary

In this chapter, the research design and methodology of the study was discussed. The study was conducted in two phases. The first phase included an exploratory pilot case of strategic-management practice at Couplet in the truck-trailer coupling industry. For the second phase a dual methodology was followed; it involved a single in-depth case study and a multiple case-based design. The single case study was based on the non-mechanical systems issue at Couplet and the company's subsequent move into and development of these systems and of trailer surveillance systems. The following strategy-creation processes and companies were included in the multiple-case study of the second phase: Ericsson's entry into mobile telephony communications systems and creation of a mobile telephony business, Pharmacia & Upjohn's entry into smoking-cessation products and creation of a consumer healthcare business and AGA's entry into Eastern Europe and creation of an Eastern European industrial gas business.

In the next chapter, the single in-depth case is illustrated, discussed and analyzed. It is a closer examination of Couplet's entry into and development of non-mechanical systems and the trailer-surveillance systems industry. It is followed by a thorough evaluation of strategic management theory in regard to strategy-creation. The objective is to examine in detail any weaknesses of strategic management theory in respect to strategy-creation and complex foresight horizons. The multiple retrospective cases are described and discussed in the remaining chapters.

Chapter 4

THE SINGLE IN-DEPTH STUDY: STRATEGY CREATION IN COUPLET

4.1 Introduction

The first-phase pilot study of Couplet⁵⁸ unveiled three strategic issues facing the company: production, globalization and a potential non-mechanical systems product. However, one of these seemed to have more significant implications for future growth. This issue concerned strategy creation and was the only one involving a truly complex foresight horizon. One issue, production, was not strategic at all, and the other, globalization, essentially implied following competitors.

In brief, it appeared as if strategic issues involving complex foresight horizons and strategy-creation challenged traditional strategic management theories and perspectives. For the globalization and non-mechanical system product issues, the relationships between strategy process and strategy content were crucial. Similar to strategy-creation, this relationship between strategy process and strategy content seemed to be poorly explained by strategic management theories and perspectives. It was established that the focus of subsequent study would be on *strategy creation* and on *relationships between strategy process and strategy content*.

The research design and scientific approach for the investigation of these issues was outlined in the discussion on methodology in the previous chapter. The study is based on a *dual methodology* involving a single in-depth case study and a multiple retrospective case study. In this chapter the single in-depth case is presented. The objective is to examine the findings of the pilot study more thoroughly and, in particular, to examine the form and character of strategy creation.

The single in-depth case includes a close examination of the strategy-creation process of Couplet's entry into, and development of, non-mechanical systems and the company's evolution into a full-fledged trailer surveillance company. The focus is on

Scanmeck Couplet (later Couplet) in the trailer coupling mechanical systems and trailer-surveillance systems industry in the early nineties. The description and analysis concern the third strategic issue at Couplet, delineated in the pilot study, the non-mechanical systems issue. Strategy-content as well as strategy-process aspects are investigated. From the empirical findings, an initial conceptual framework is developed which is subsequently broadened and used in the continuation of the study.

In the next two chapters strategic management theories are thoroughly evaluated, in relation both to strategy-creation in general and to the case of Couplet and the non-mechanical systems strategy in particular. An overview and a short recapitulation (4.2.1) of Couplet's structure and strategy are provided below (earlier described in detail in Chapter Two, pp. 6-12, and Appendix C) before the strategy-creation process itself is discussed.

4.2 Strategy Creation at Couplet - The Non-mechanical coupling system.

4.2.1 Couplet

Couplet, formerly a part of Scanmeck (Scanmeck Couplet), a Swedish specialty mechanics group, is a leading producer of trailer coupling mechanical systems, electro hydraulic systems and other trailer-surveillance equipment worldwide. The company first led the consolidation of the Swedish truck trailer-coupling mechanical systems manufacturing and assembly industry; it then moved into Europe in the early eighties and has since expanded globally. By the late nineties it had become a global MNC with sales of USD 5,234 M and 31,000 employees (1998, see table 2.1). Henceforth the company will be referred to solely as "Couplet".

⁵⁸ As in the pilot study all names, figures, dates, locations and companies are disguised.

<i>Company</i>	<i>Traditional Industry</i>	<i>Sales MUSD (1998)</i>	<i>Employees (1998)</i>	<i>Number of Markets</i>	<i>New Industry & Business</i>	<i>Time frame examined⁵⁹</i>
Couplet	Trailer coupling Industry	5,234	31,000	42	Trailer surveillance-/ electro-hydraulic-/ non-mechanical coupling systems	1988-1998

Table 2.1: An overview of Couplet.

The principal strategy from the start was to acquire companies and restructure them more efficiently. The President, Leif Svensson, played a dominant role in the development of the company and the implementation of this strategy. From the very start, the Couplet organization was based on simple structures, informal communication and personal initiatives - all part of the Scanmeck way of doing business. The headquarters in the South of Sweden was small, consisting of around ten people, in relation to the company's 5,000 employees in the mid- and late eighties. A new President, Carl Johansson, was appointed in 1989 when Leif Svensson was promoted to head Scanmeck Components.⁶⁰

Senior management consisted of three vice presidents (Finance, Technical and Marketing & Sales), besides the President. Couplet had a small development subsidiary in the beginning that later grew and was split into three units, one in Sweden, one in England and one in Germany. After entering Asia and the US, the company also had arrangements for cooperation in product development there. Since the early eighties, the industry had gone through a steady stream of mergers, acquisitions, joint ventures and other alliances. By the mid-nineties this consolidation process had resulted in four major global competitors: Couplet, two American companies - F & H and Coupling & Co. - and one Japanese company - Kima. Couplet dominated the European market with a market share of 45% in 1992, but it had little presence in other world markets except for some small joint ventures in

⁵⁹ The time frame refers to the approximate period of the strategy-creation process. See the methodology chapter (chapter three) for a discussion of the point at which the examination of strategy process should begin and end

⁶⁰ Leif Svensson later returned as President after a reorganization at Scanmeck in 1992.

Asia. Other market shares at this time for Europe were 32% for F & H , the American company Coupling & Co. 8%, German Kupplung GmbH 6% and Kima 5%.

4.2.2 External Context

Trailer control legislation had an impact on the truck-trailer coupling industry. First-trailer coupling mechanical systems regulations in the late seventies and early eighties had increased demand in Europe, and in the mid-eighties regulations of second-trailer coupling mechanical systems had a similar effect. In the US, some states had trailer coupling mechanical systems regulations, but truck owner opposition was quite strong.

In 1976, the US National Highway Traffic Safety Administration (NHTSA) ordered truck manufacturers to equip their trucks with non-mechanical systems by the 1979 model year. There were various non-mechanical systems, but the two major alternatives were electro mechanical systems⁶¹ and electro hydraulic systems. However, during the next ten years the truck manufacturing industry lobbied against the non-mechanical system requirement and electro hydraulic systems, claiming that these would be too expensive. Furthermore, electro hydraulic systems were argued to be unworkable and unreliable, since in a few cases their use had led to accidents⁶². Insurance companies, various interest groups and legislators were on the other side, arguing for a non-mechanical system device.

The non-mechanical system requirement was amended over the years in a process involving a number of courts and government agencies, including the NHTSA and the US Department of Transportation Department. Finally, the NHTSA was directed to review the non-mechanical system requirement in 1987. The following year truck manufacturers were required to introduce non-mechanical systems gradually as standard equipment on all new trucks sold in the US. The year of full phase-in was later postponed to 1994 on the first trailer and to 2000 on the second trailer coupling.

⁶¹ Electro-mechanical systems are purely electronically based and include no hydraulics.

⁶² The truck manufacturer Roadstar presented a report in 1979, which stated that electro-hydraulic systems had caused serious accidents in an electronic non-mechanical coupling simulation experiment.

The approval in 1987 of the US federal law requiring non-mechanical systems opened up a \$8 billion market for non-mechanical truck coupling equipment overnight. Since similar requirements had been proposed several times earlier without passing, the industry was somewhat unprepared, especially European companies. Some thought that regulators, pressed by truck manufacturers, might change their minds once again.

Adding to the confusion was the fact that the law did not specify what specific system would be required, and it was highly uncertain what system truck manufacturers would choose. They were required to equip all trucks with a non-mechanical system, but they did not know what kind of system to adopt. There were a variety of alternatives, the two major ones being electro mechanical systems and electro hydraulic systems. It was also unclear what non-mechanical systems truck buyers and companies would prefer. Even less clear was what the impact would be on the European market, as mechanical coupling systems were the predominant trailer coupling systems there and were strictly regulated by law in most countries. There were no expectations of a non-mechanical systems requirement in Europe.

Most actors in the US thought that electro mechanical systems would be the predominant system if a law required one. The principal alternative was the electro hydraulic system. Experimental electro hydraulic systems had been in existence for a long time. As early as 1972 an American company, Lega, presented the foundation of today's electro-hydraulic system technology.⁶³ A German truckmanufacturer BWD built an experimental electro-hydraulic system-equipped truck fleet in 1975, and two years later another major US truck company, Western started to manufacture the first modern electro-hydraulic system; nevertheless, the non-mechanical coupling market remained largely undeveloped at that time. Truck makers in Europe, like Roadstar and Fasttruck, also experimented with electro hydraulic systems, and in 1981 Fasttruck presented the first electro-hydraulic system in Europe. However, the European market for electro hydraulic systems was still very small in the mid-eighties.

Electro-hydraulic systems involve several interdependent parts: a hydraulic pump or injector, including chemicals and oils, electronics, sensors, cylinders and a

metal or plastic hatch. The technology was still under development in the late eighties, when the nature of the future electro-hydraulic system technology was uncertain, especially regarding hydraulic pumps and electronic components and sensor devices.

Most truck companies focused first on electro mechanical systems, but some subsequently looked into the hydraulic technology as well. New competitors entered the emerging electro-hydraulic system industry from various directions. There were companies with competencies in chemicals and hydraulic oils, hydraulics, hydraulic cylinders, and diverse companies in the truck industry, such as manufacturers of trailer coupling mechanical systems. Many in the truck industry saw the oil and chemical industry as the natural and principal supplier of electro hydraulic systems since complex hydraulic oils were of vital importance.

Firms entered into various strategic alliances in order to obtain access to diverse electro-hydraulic system technologies. Thus, it was highly unclear what the truck-trailer coupling and electro-hydraulic system industry would look like in the future. Adding to the dynamics of the industry was the fact that truck manufacturers were putting increasing pressure on the suppliers of truck-trailer coupling to lower prices and cut costs.

It was far from obvious that electro hydraulic systems would play a major role as non-mechanical system. One year after the law requiring them was passed, the CEO of the largest truck company in the US, portrayed electro hydraulic systems as "...unnecessary, useless and a solution much worse than the problem." And even after the law finally was established and the electro-hydraulic system subsequently seemed to become the predominant means of non-mechanical system, uncertainty still prevailed. A well known industry truck journal described the electro-hydraulic system as "...one of the most unfortunate truck products in America" in 1990.

4.2.3 Internal Context

Given the uncertain external context it was far from self-evident that Couplet would move into the non-mechanical systems and electro-hydraulic system market despite

⁶³ In 1982 Lega, the first company to present a modern electronic non-mechanical coupling technology, abandoned a huge, \$25 million electronic non-mechanical coupling project because the government,

the company's successful growth record in the trailer coupling mechanical systems industry during the mid- and late eighties. They had acquired a dominant position in the trailer coupling mechanical systems industry in Europe and later made a gradual move into other major markets.

The US non-mechanical system legislation and its subsequent impact came as something of a surprise to Couplet. The company had not specifically been following the US legislation process, and when it learned about the new requirements of the US Department of Transportation (DOT), there was no immediate reaction. Couplet was not too concerned with the new US requirements and the impact of the decision, since their major markets were in Europe. However, Roadstar, an important customer of Couplet, was more concerned about the developments since they had to accommodate to the new law for their US export trucks.

4.2.4 Non-mechanical coupling systems: Electro-hydraulic systems, Electro-mechanical systems or No System at All?

For Couplet, the electro-hydraulic system and non-mechanical system was one item to consider among many others, some of which were perceived to be of much greater strategic importance. The company did not regard electro hydraulic systems or non-mechanical systems as a strategic issue, but did observe technological and market developments in that area through ad hoc discussions with customers and following the truck industry journals. The legal process concerning non-mechanical systems in the US had been continuing for several years, and the outcome appeared uncertain. Furthermore, electro-hydraulic system technologies were unknown to Couplet at the time. The company's interest grew as American trailer coupling mechanical systems manufacturers began to enter the non-mechanical systems and electro-hydraulic system market, but prior to the US legislation of 1987 this area was of no particular strategic concern to Couplet.

Influenced by customers, primarily Roadstar, Couplet subsequently and gradually started internal discussions about possible non-mechanical systems. The question was whether, and if so how, the company should meet the DOT

once again, had canceled its plans regarding non-mechanical systems.

requirements: with electro mechanical systems or electro hydraulic systems. Their prior experience was exclusively in trailer coupling mechanical systems, and they had no experience with the electro-hydraulic system technologies. Couplet and many others in the industry believed that truck manufacturers would use both electro mechanical systems and electro hydraulic systems but that the former solution would be the major product of the two.

Several types of electro mechanical systems had been developed in the US, and truck manufacturers there had already been equipping some of their models with these kinds of mechanical systems for a few years. Couplet would develop electro mechanical systems rather than electro hydraulic systems, since the company's technological knowledge was solely in the trailer coupling mechanical systems area. It was also influenced by the fact that Roadstar had initially chosen electro mechanical systems and had started a dialogue with Couplet concerning them. Hence, in choosing between electro hydraulic systems and electro mechanical systems, Couplet was influenced by its prior experience with mechanical coupling systems and its customers' preference for electro mechanical systems.

These factors were decisive in Couplet's decision to develop electro-mechanical trailer coupling systems under the auspices of the Couplet Development Company - the first formal technology development program at Couplet. However, after some time Roadstar changed its thinking and started to focus more on electro hydraulic systems. One reason why Roadstar and others began to turn to electro hydraulic systems was that Fasttruck, which at an early stage had started to develop an electro-hydraulic system technology, introduced a successful marketing and information campaign based on their electro-hydraulic system. Subsequently a demand pull from ultimate customers (i. e., truck buyers) and freight companies became perceptible. Roadstar defined its own electro-hydraulic system and bought the technology from electro-hydraulic system suppliers in Germany in 1990-91 and equipped some of its long-haul trucks with it.

Couplet started to manufacture electro mechanical systems in 1991 in Germany and England. The company did not change its strategy regarding electro hydraulic systems despite Roadstar's and other truck manufacturers' increasing interest in them. Couplet was quite hesitant about electro hydraulic systems since the

market for them was limited in Europe, which accounted for above 75% of company sales.

When the legislation and its impact became apparent, electro hydraulic systems had surfaced as a more important issue at Couplet but were still not considered a realistic option. There was confusion concerning electro hydraulic systems at the company, as it generally was throughout the truck-trailer coupling industry. It was highly unclear what customer preferences and specifications would be and even less clear what the end users - the truck buyers - would want. And since the issue was not considered strategic, there was no effort to investigate it further. Since changes were taking place in all areas surrounding the electro-hydraulic system product - new competitors were entering the field, new technologies were being developed and new legislation was under way in the US - top management's perception of the non-mechanical coupling issue at Couplet was characterized to a high degree by uncertainty.

4.2.5 Continued Hesitation Regarding Electro-hydraulic

Couplet had serious doubts concerning electro hydraulic systems since the technology was unfamiliar to the company, and heavy investments in research and development would be necessary should the company decide to enter. Furthermore, the technology required the use of highly dangerous hydraulic oils. Hence, high costs and substantial risks were involved. As one senior manager put it: "We were very hesitant regarding electro hydraulic systems".

Senior management was not clear about what impact the electro-hydraulic system would have on the industry and especially on the European market. There was no sign of electro-hydraulic system legislation in Europe, Couplet's principal market. On the other hand, the major European countries had introduced regulations regarding trailer coupling mechanical systems, and legislation was continuing as part of the process of conforming to EC/EU standards, but no sign of mandatory non-mechanical systems. Given this situation, it was doubtful that European truck manufacturers would be inclined to install electro hydraulic systems and that truck owners and companies would be willing to pay for them. In addition, the trailer coupling

mechanical systems regulations was bringing good growth to the traditional trailer coupling mechanical systems market, and the company would have to respond with investments in production and product development in that area. Also, promising new mechanical trailer coupling systems products were being presented at Couplet. In the late 1980's Couplet had no particular system for surveying developments in the electro-hydraulic system area, but primarily relied on the studies and choices made by their traditional customers.

From 1990 on, Fastruck equipped all their export trucks, mainly for the US market, with first-trailer electro hydraulic systems, and Trabtruck included them as standard equipment on its larger trucks. Even though a market for electro hydraulic systems seemed to be developing at the time, Couplet appeared to continue a wait-and-see policy. However, at the initiative of customers, mainly Roadstar, Couplet started to examine the electro-hydraulic system alternative, even if it was still not thought to be of strategic importance. Couplet was a trailer coupling mechanical systems company and, if anything, the electro-hydraulic system was considered to be a minor niche product in upscale and heavy long-haul trucks. "Even if the electro hydraulic systems would become a product in the truck-trailer coupling industry, we though that the volumes would be very limited" [Couplet senior manager]. The primary policy was to anticipate what the truck manufacturers would do. However, some preliminary product studies were done in the mid-eighties. The English part of the company was very doubtful and did not believe in electro hydraulic systems, and the German organization was hesitant as well. In Sweden the decision was left largely to Swedish truck manufacturers Roadstar and Wheelright.

Roadstar and Couplet had a long history of cooperation⁶⁴ in the development of truck-trailer coupling, and after Roadstar had decided in favor of electro hydraulic systems, the two firms began a dialogue on how to proceed further. Roadstar had assembled its own electro hydraulic systems so far but now wanted an external supplier. This policy shift led to collaboration with Couplet regarding electro hydraulic systems for Roadstar's US export trucks. For this purpose some engineers were transferred from Roadstar to Couplet in 1990.

⁶⁴ Roadstar and Couplet had cooperated since long regarding truck-trailer coupling. Roadstar often developed the products while Couplet, or rather its predecessors, assembled or manufactured them.

Basically Couplet continued with the Roadstar electro-hydraulic system. This electro-hydraulic system had already been developed and essentially involved an old electro-hydraulic system technology. Couplet's role was essentially to assemble electro hydraulic systems rather than to develop them. Most parts were bought from sub-suppliers. Couplet remained hesitant and did not want to enter the electro-hydraulic system manufacturing market on a full scale. Management felt secure about the company's share of Europe's trailer coupling mechanical systems business, which they did not want to risk by taking the major step of entering a business involving a more sophisticated, complex and costly technology. Although Couplet assembled electro hydraulic systems, it had no electronic or hydraulic technology of its own and did not manufacture any part of the main electro-hydraulic system components at this time: electronics, hydraulics, sensor devices, chemicals/oils, cylinders, and hatches. "We were very hesitant; we saw great difficulties, especially since we did not have the technology. We did not have electronics and hydraulics; both were necessary" [Couplet senior manager].

Truck manufacturers did not see Couplet as an electro-hydraulic system supplier. Some engineers and technical managers wanted Couplet to go further in electro-hydraulic system development, but Couplet senior management thought that the costs of including electro hydraulic systems as standard equipment might be too high for truck makers. The President, Leif Svensson, as many other in the industry, did not quite believe they would accept this expensive technology.

However, Couplet had started to acquire some initial knowledge about electro hydraulic systems and electro-hydraulic system technology after entering into the supply contract with Roadstar, and at this point product development was initiated on a minor scale. Couplet's concern about developing its own electro-hydraulic system, and investments for this purpose, had increased as a growing number of truck makers wanted these systems for their (US) export vehicles. Although enthusiasm for electro hydraulic systems was still limited, some technical managers thought that the company needed some technology in order to be a credible sub-supplier to the truck industry, even if only for upscale US export trucks.

In 1991 Couplet acquired Saga, a small truck electronics company, in order to obtain access to truck electronics. That same year the company initiated cooperation

with a German conglomerate, Katakem GmbH, for the purpose of developing a hydraulic pump for the electro hydraulic systems. Thus, Couplet had started to consider the electro-hydraulic system market, albeit on a small scale.

While senior management believed that electro hydraulic systems were mostly for long-haul and heavy long-haul trucks and thus could only involve small volumes, there was some sense that the market potential might be larger than initially anticipated: "Electro-hydraulic systems might become important on long-haul trucks. Fasttruck's large-truck division has confirmed that sophisticated trailer couplings might sell." (Leif Svensson, in an industry magazine).

Later Couplet managed to find an additional buyer for its electro-hydraulic system: Wheelright, which had no electro-hydraulic system development of its own. The focus continued to be on special-niche trucks for US export and on assembling electro-hydraulic system components, rather than on developing and manufacturing electro hydraulic systems or electro-hydraulic system components. Essentially the primary tactic continued to be one of waiting to see what truck makers would choose. The technology was still unfamiliar to Couplet and beyond the scope of their competence and resources. Moreover, only peripheral actors such as a few engineers and customers really believed in the product. Others did not see any potential in the electro-hydraulic system, but realized that Couplet had to offer this product if truck manufacturers required it. "The electro-hydraulic system was a necessary evil" [Couplet senior manager].

4.2.6 The Electro-hydraulic system Emerges as an Important Issue

The electro-hydraulic system initially developed by Couplet was based on the conventional US electro-hydraulic system, which they were already assembling on a minor scale for Roadstar's and Wheelright's US-export trucks. However, early on Roadstar had started to examine a smaller type of electro-hydraulic system as a complement to trailer coupling mechanical systems in order to increase trailer control - a "mini coupling". This has to be seen as a backdrop to existing already far-reaching European regulation of mechanical couplings. Thus, there were basically two choices in regard to the technology for electro hydraulic systems. One was to opt for the full

American type of electro-hydraulic system, and the other was to develop a mini European type of electro-hydraulic system. As most European countries had trailer coupling mechanical systems regulations, a mini coupling would suffice in Europe. Moreover, it would be cheaper to produce. It would provide improved trailer control and safety, but at a lower price than the American larger system.

Soon support for developing the smaller electro-hydraulic system, a "Mini coupling," began to grow at Couplet - for several reasons. First and foremost, Couplet was not a global actor. The company had over 75% of its market in Europe, where there was no electro-hydraulic system legislation. Second, American and Japanese competitors were far ahead in the larger US couplings and it would be difficult for Couplet to catch up. Third, Couplet thought that European truck makers would not be willing to pay for the larger robust coupling, but might be interested in a smaller and cheaper coupling. However, competitors in the electro-hydraulic system market did not believe in the smaller electro-hydraulic system.

Couplet began to examine the electro-hydraulic system market in greater depth as the market in the US grew. It seemed increasingly clear that electro hydraulic systems would out-compete electro mechanical systems as the principal non-mechanical system. In 1992 the largest American truck company, which a couple of years earlier had resisted electro hydraulic systems, became the first US truck maker to install first-trailer electro hydraulic systems as standard equipment on all its domestic-made trucks. Forecasts for the electro-hydraulic system market were continuously revising their estimates upward. In Europe, groups of truck drivers started to put pressure on freight companies about electro hydraulic systems since they were easier to manage and safer. This increased the pressure on the truck manufacturing industry to install electro hydraulic systems in their European trucks.

In the late eighties, Couplet did still not have its own electro-hydraulic system technology or any supply contracts. At about this time Leif Svensson was promoted to President of Scanmeck Components, a newly formed Scanmeck unit that included Couplet's activities and the manufacturing of other components for Scanmeck's other product lines. He became the chairman of Couplet and a new President was assigned. The new President, Carl Johansson, came from another industry and managed the company with the support of the Finance and Technical Vice Presidents, both of

whom had considerable experience from the trailer coupling mechanical systems industry and the company.

Mr. Johansson was somewhat surprised that Couplet had not achieved more in the electro-hydraulic system area and that there was still some hesitation at Couplet and among other Scanmeck managers, including those at the corporate level. Those at Couplet who advocated the product were now given greater support, and more focus was put on the electro-hydraulic system. The company escalated the effort to develop a "Mini coupling" and increased its investments in R&D and production. However, by late 1993, six years after the US legislation, Couplet had no production of electro hydraulic systems and no on-going supply contracts with the truck industry.

Truck manufacturers started to be concerned that Couplet was lagging behind in electro-hydraulic system technology as they felt growing market pressure for electro hydraulic systems from truck buyers and freight companies in Europe. Couplet realized that it had to increase its own production of electro-hydraulic system components. The primary objective of the new President was to become an electro-hydraulic system supplier as soon as possible. His goal was to enter the electro-hydraulic system market by introducing the new Mini coupling technology, even if some internal vacillation remained. He emphasized his focus on electro hydraulic systems in an internal report late in 1993: "For the electro-hydraulic systems business the US legislation regarding non-mechanical systems on the first trailer from 1994 means that the time for market introduction has now definitely comeIn electro-hydraulic coupling our relative situation is negative because of the fact that we presently have no ongoing supply contracts with the truck industry. Consequently, it is crucial for us to become a regular supplier as soon as possible. It is our number-one priority!"

4.2.7 The Electro-hydraulic system Becomes a More Strategic Issue

During 1993 and 1994, Couplet's investments in the development of its own electro-hydraulic system, the Mini coupling, increased substantially. However, Couplet's more aggressive efforts to enter the electro-hydraulic system market were still far from generally accepted at the company and at the Scanmeck corporation. Even if

electro hydraulic systems were here to stay and might even become an important product in European trucks, the market potential was uncertain. Some senior and other managers at Couplet headquarters were still hesitant about electro hydraulic systems and unsure whether it was wise to opt for the more compact Mini coupling. "I was hesitant if we should go for the Mini coupling...I was not comfortable with the idea of going for the Mini coupling" [Couplet senior manager].

Couplet's major competitors did not believe in the smaller electro-hydraulic system, either. In addition, heavy investments in other product development in the beginning of the nineties limited Couplet's capacity to act in other areas. Moreover, Scanmeck management, including Scanmeck corporate management, and the Scanmeck board were skeptical towards electro-hydraulic system investments as well. Scanmeck had its main focus on the specialty mechanics industry and did not give Couplet any priority.

However, the development of the Mini coupling continued despite that everyone did not concede. It was a considerable step for Couplet, which historically was a single-product firm, to start developing an entirely new product. A few engineers and technical managers supported the new direction taken by the company. Those in favor of the electro-hydraulic system used various methods to increase the knowledge that Couplet needed to compete in the electro-hydraulic system industry. The more informal methods and sources included screening of truck magazines and journals, as well as visits to conferences and exhibitions. Informal meetings and personal contacts, both within and outside the company, were especially important. Some more formal methods included collection of data from databases, investment analyses, consultancy reports, etc. and formal meetings with suppliers, partners, competitors, etc.

Different groups at Couplet resorted to various methods to inform themselves about the strategic issue in question. Technical personnel and the subsidiaries used their close cooperation with truck makers and suppliers as an informal means of acquiring information. Senior management turned to more formal sources of information like market and industry studies and reports, but also some informal sources like personal contacts in the industry.

However, since the electro-hydraulic system industry was merely in an embryonic stage formal sources were scarce and often unreliable. "The forecasts regarding electro hydraulic systems showed much lower volumes than what was subsequently demanded" [Couplet senior manager]. Different groups used various sources of knowledge and bases for evaluating and following the strategic issue of electro hydraulic systems. There was some tension between the two groups. Their point of departure and relation to this strategic issue were quite different, as were their approaches to finding out more about it.

When truck makers in the US chose electro-hydraulic systems as non-mechanical systems, the electro-hydraulic system market received a tremendous impetus and started to boom. Couplet intensified its focus on the electro-hydraulic system and developed various projects involving the product. Couplet's major competitors in the US had experienced significant growth. In attempting to achieve a foothold in the American market, Couplet entered into a joint venture with the Japanese company Kaio, in the US. The Couplet President and his supporters would have preferred a bolder electro-hydraulic system venture in the US, but its parent company, Scanmeck, and the Board resisted a more forceful entry into the electro-hydraulic system market. "The CEO of Scanmeck clearly rejected the idea of an electro-hydraulic system venture in the USA" [Couplet senior manager].

Nevertheless, Couplet managed to achieve various kinds of collaboration in the development of the electro-hydraulic system. Slowly the company built up its resources and capabilities in electro hydraulic systems via customers and through various forms of cooperation. An electronically guided hydraulic pump, a complex critical component in the electro-hydraulic system, and other important electro-hydraulic system components were developed through diverse cooperative arrangements. Couplet focused on a small type of hydraulic pump for the Mini coupling and abandoned attempts to develop an American type of coupling and pump. The company still assembled American hydraulic couplings, but for the components involved in those there were simply supply contracts, no alliances or other cooperative arrangements. The support of some former skeptics among Scanmeck managers and in senior management and others subsequently grew with the increase in the demand for electro hydraulic systems and in the company's competence.

The market started to look more promising for Couplet in the mid 1990's as several truck makers showed an interest in the smaller and cheaper Mini coupling, but it was not until 1995 that Couplet produced its first electro hydraulic systems. The truck company Western, which had received unfavorable publicity regarding their failing trailer surveillance systems needed to improve their record in this respect, they decided to install electro hydraulic systems as standard equipment. This step led to the first major Mini coupling contract for Couplet, and the first deliveries were made in 1996. Later, French truck makers, with no US activities, showed an interest in the Mini coupling and signed supply contracts. Couplet had finally become an electro-hydraulic system company, and internal support in Scanmeck and Scanmeck Couplet for the electro-hydraulic system increased considerably.

The development of the Mini coupling was moved to the German development company in 1995. That same year Carl Johansson resigned as President, and Leif Svensson returned to that position. The reshuffle was partly due to a change of organizational structure at Scanmeck and Scanmeck Components, which Mr. Svensson headed, but also seemed to involve diverse opinions regarding the business and the hydraulic-systems.

Roadstar and Wheelright did not adopt the Mini coupling. Instead, they wanted the larger, more robust couplings in all of their trucks, not only for their US exports, to achieve the benefits of standardization. In this way the Swedish Couplet organization became experts on the American couplings. Later, other European truck makers that exported to the US made the same decision; they preferred American couplings to the Mini coupling for reasons of standardization.

Couplet's competitors, which only supplied the more robust electro hydraulic systems, tried to discredit the smaller couplings by pointing to various technical flaws. Truck makers that used the more robust version claimed that it was more effective than the more compact one. Influenced by these charges, Trabtruck, which had initially preferred the Mini coupling, changed its policy and chose the robust American coupling - a clear setback for Couplet. Once the company's Mini coupling concept had finally taken shape, the European market boomed, but for American hydraulic couplings. However, Couplet had established itself as a manufacturer of electro hydraulic systems in Europe and controlled the technology. It had learned

about the technical and market requirements for the electro hydraulic systems. Furthermore, Western and the German manufacturers, which were large-volume customers, stayed with the Mini coupling as they did not have any US exports.

4.2.8 From a Trailer coupling mechanical systems Sub-supplier to a Full-fledged Trailer surveillance systems Company

Nine years after the US legislation, Couplet had finally become a major competitor and supplier on the electro-hydraulic system market, even though primarily in the smaller Mini coupling segment. The initial production and deliveries were of first-trailer electro-hydraulic systems. In the beginning, Couplet was opposed to developing second-trailer electro hydraulic systems: "We did not want to have anything to do with second-trailer electro hydraulic systems" [Couplet senior manager]. The reasons were argued to be important technical problems in development and production and doubts if that side of the market would take off.

Truck companies in the US were required to begin phasing in second-trailer electro hydraulic systems from 1998 with full coverage from 2005. This time, however, it was easier for electro-hydraulic system supporters and customers to influence any remaining hesitation, and Couplet subsequently entered that area of the market, too. Starting in 1995, Couplet's electro-hydraulic system sales went from zero to 5 billion SEK in four years. The electro-hydraulic system venture had finally turned out to be a great success. By this time, there was virtually total support for the electro-hydraulic system strategy throughout Couplet and those sections concerned in Scanmeck. It had become a core strategy, and electro-hydraulic systems had become a core product.

President Leif Svensson led the company into new successful electro-hydraulic system ventures. Couplet headed the development of the European electro-hydraulic system and trailer surveillance systems industry. Over time the two electro-hydraulic system technologies started to converge. The American electro-hydraulic system was scaled down, and the European one, became more robust and stronger. Couplet became a forerunner in this process.

In 1997, Scanmeck sold their share in Couplet to a Swedish investment company. Couplet saw their electro-hydraulic system sales increasing steadily, and they expanded their electro-hydraulic system focus. The company started to bring new concepts and technologies into the electro-hydraulic system market. A range of products in the electro-hydraulic system category was introduced; besides second-trailer coupling electro-hydraulic systems, there were trailer weight adjustment electro-hydraulic systems, cargo adjustment electro-hydraulic systems and truck cabin electro-hydraulic systems. In this way, electro-hydraulic system products accounted for an increasing portion of Couplet sales. Couplet quickly became a leader in developing new electro-hydraulic system applications. The company also developed a range of mechanical coupling systems related trailer surveillance products such as elevation tuners, trailer coupling mechanical systems frames and automatic coupling stretchers.

In 1998, Couplet announced a merger with the US electro-hydraulic system company Polychem Electro Systems, a part of Polychem International. The main synergies were argued to be a better-balanced company and substantial economies of scale and cost reductions. Polychem had a substantial presence on the US market and was a major supplier of electro-hydraulic systems, while Couplet was larger on the European market and in mechanical coupling systems. Polychem had entered electro hydraulic systems from another industry, chemicals/oils and food supplements. Via a division making hydraulic oil, Polychem entered into electro-hydraulic system production on the basis of hydraulic oil technologies.

After the merger, Leif Svensson became the CEO of the new company Couplet Inc., which has since become a full-fledged competitor in the trailer control and surveillance industry and a forerunner in developing new trailer surveillance products and systems. The latest products include systems for trailer height and width adjustment. Moreover, the company markets other trailer-surveillance systems, such as truck load control and management systems and have development projects in other load and JIT management areas. Trailer coupling mechanical systems were still a large product in 1997 despite the growth of the electro-hydraulic system market and Couplet's increasing sales of electro hydraulic systems. With the finalization of the

merger with Polychem in 1999, however, electro hydraulic systems became the largest-selling product of the new company.

4.3 Couplet and the Electro-hydraulic system - Strategy Context, Content and Process.

It has already been concluded in the pilot study that the non-mechanical systems issue had a distinct character compared to other strategic issues at Couplet. In particular, it involved a complex foresight horizon, and there were no clear answers, in terms of strategy *content* and *process*, to the two fundamental strategy questions of *where to go* and *how to get there*. Indeed, not even the questions themselves were clear.

A more detailed description of Couplet's entry into non-mechanical systems and development into a full-fledged trailer surveillance systems company has been provided above. A general analysis of the strategy-creation process, based on Pettigrew's (1985b, 1987b, 1990) model for research on strategic change, now follows. It provides an analysis of strategic-change processes in terms of *strategy context*, *content* and *process*, respectively. This examination aims at developing definitions and constructs to be used subsequently in the study. Next, strategic management theories will be investigated in relation to strategy-creation in general and to the non-mechanical coupling systems issue at Couplet in particular. This analysis is performed in the following two chapters. The remainder of this chapter will be devoted to a discussion of the contexts, content and process of strategy-creation at Couplet in the areas of non-mechanical systems and trailer surveillance products.

4.3.1 External Context - Complexity

The context that Couplet faced regarding the potential non-mechanical system was clearly characterized by high uncertainty. Non-mechanical systems had been on the market for the two preceding decades, but without any commercial success. Even after the ruling and legal requirements regarding non-mechanical systems, it was not certain whether there would be any non-mechanical system product or electro-

hydraulic system industry at all. There were no buyers in the US, since truck manufactures were skeptical, and the European market was even more doubtful.

Subsequently there were continual changes in technology, competition, customer preferences and legislation regarding the electro-hydraulic system. The technology was constantly being upgraded, and it was extremely difficult to define what would result from technological development, since initiatives were coming from a range of different industries such as hydraulic chemicals/oils, hydraulic pumps, cylinders and hatches, electronics and truck products. New firms were emerging based on these various technologies, and boundaries between firms were altered through cooperation, mergers and acquisitions. Cooperation and competition were at times indistinguishable in this process. Truck manufacturers expected the oil and chemical industry to be the major supplier of electro hydraulic systems, but they had still not defined what kind of non-mechanical system they wanted. End buyers of trucks were not even involved. Another issue was the risk of possible litigation, arising from claims that the electro hydraulic systems failed to perform properly. Adding to the complexity was the fact that development was taking place on a global scale, with the three main competitors based in the US (F & H), Europe (Couplet) and Japan (Kima), respectively. In addition, US legislators were drafting new laws to regulate truck safety. As was thoroughly described in chapter two, Couplet was facing an extremely complex foresight horizon. In sum, the context surrounding the non-mechanical system and the electro-hydraulic system was highly ambiguous and dominated by *complexity*.

4.3.2 Strategy Content - a Puzzle

At the outset, before the US legislation, non-mechanical systems were of no interest to Couplet. After the requirement had been passed, interest in these systems increased, but the issue was not considered strategic. Subsequently it became more important as customers and competitors also began to show an interest. Later Couplet started to focus on non-mechanical systems and to take action in this area. However, they had no idea where their various actions regarding the new products and technology would take them, nor what they really wanted to achieve.

Hence, the evolving strategic issue was surrounded by complexity in terms of both uncertainty and ambiguity. Faced with this emergent technology and industry structure, most people at company felt uncertain. No matter what their level at the company, most individuals with some knowledge of the new product were unsure about the technology and what role it would play in the industry, if any. What later evolved as a major strategic issue for Couplet was at the outset one vague general consideration among many others. It was more a question of unfocused concern and a puzzle to those involved at Couplet than a clearly defined strategic problem. Few among management in Couplet and Scanmeck considered the issue to be important in the beginning.

To sum up, there was no specific strategy content at the outset. Essentially, the company was confronting a *strategic puzzle* rather than a well-defined strategic issue. The term "puzzle" seems appropriate, since the strategic concerns first emerged as loosely defined issues in a context of confusion and ambiguity, rather than as specific problems or an orderly framed set of questions.

4.3.3 Internal Context - Two Sub-processes

Couplet had historically demonstrated inertia regarding the non-mechanical systems and electro-hydraulic system issue. Even after the American legislation and subsequent moves by competitors and other actors, the company remained hesitant. The technical department followed electro-hydraulic system developments, but more for purposes of merely observing what was going on in the industry than conducting a determined search. Some in senior management did not consider the electro-hydraulic system to be worth much attention, even if they thought it might hold some interest for makers of more exclusive truck models.

In general, senior management at Couplet and Scanmeck management, including the corporate level, were initially hesitant towards electro hydraulic systems. The issue was promoted primarily by more peripheral actors such as customers, a few engineers and technical managers, and later by the new President. It is essential to note that the new President was recruited externally. In this sense,

despite his central position, he was more "peripheral," with a different view of matters, than other Couplet executives.

The actors in the periphery identified the first pieces of the puzzle. In the late eighties and early nineties, Couplet became more active in the non-mechanical system and electronic system area, but knowledge about the electro-hydraulic system market and products was quite limited in the late eighties.

Only later did the question of Couplet's involvement become a more strategically important issue, and even then some internal resistance remained. The more peripheral actors, including the newly appointed President, were prime movers in the creation of the company's strategy. Subsequently, more members of senior management became more supportive and involved as well, while Scanmeck management, including the corporate level, remained rather reserved for a longer time. There was some friction between supporters and opponents of the new strategy. The dispute was even a factor in the new President's resignation.⁶⁵ The two groups occupied distinct positions in relation to strategy development and propelled it in different ways. In brief, *two separate strategy sub-processes*, partly in conflict with each other, played dominant roles in the internal context.

4.3.4 Strategy Process - Diverse Learning Dynamics

Those supporting the creation of the new strategy used a whole range of methods to gain more knowledge and to penetrate the complexity in regard to non-mechanical systems and the electro-hydraulic system issue. The other group, dominated by Scanmeck management at different levels and, initially, senior management at Couplet, remained rather inactive. It seemed as if the way in which actors in the two sub-processes obtained and interpreted information, primarily from external sources, was important for their position and its development over time. Diverse ways of information acquisition and knowledge development were involved that resulted in different perceptions and different developments of the strategic issue or puzzle.

⁶⁵ It is important to note, however, that several other factors, for example the change of organizational structures at Scanmeck, played a role as well.

This divergence of perceptions and learning mechanisms regarding the strategic issue propelled the two strategy sub-processes. One sub-process was driven by the more peripheral actors, and later by the new President. Some senior managers, Scanmeck managers, including those at the corporate level, and the Board drove the other. The first group was more active and used more external and informal information gathering and knowledge acquisition mechanisms, while the latter was less active and used more internal and formal mechanisms. The groupings exhibited quite different patterns of knowledge assimilation and strategy interpretation, despite a similar firm environment. It was also the first group that essentially moved and drove the strategy, with the subsequent support of sections of the Technical Department and senior management.

The strategy was developed primarily by the first group through a process of probing into, learning about, and interacting with the business environment for non-mechanical systems, especially customers, and not through strategic planning. It could be characterized as "customer-based" strategy development in contrast to the other group's more "industry-based" perspective, which emphasized existing technology and industry actors. There was friction between the two views; it ultimately resulted in an emergent synthesis that entailed a dramatic and successful change in Couplet's strategy. In summary, *diverse learning dynamics* dominated the strategy process, or rather the two strategy sub-processes.

4.4 Summary and Conclusions

The creation of a strategy for non-mechanical systems at Couplet has been more carefully described and examined in this chapter. Fundamental strategic change and strategy creation were involved in two respects. Besides developing and incorporating an entirely new product and technology, Couplet moved from being a sub-supplier of trailer coupling mechanical systems to an agile provider of trailer surveillance systems. The external context was dominated by *complexity* in terms of technology, markets and legal issues. Strategy content was highly uncertain and ambiguous and lacking in definition; the situation could be characterized as a *strategic puzzle*. *Two strategy sub-processes* were involved. There was some tension between the two sub-

processes and they seemed to involve diverse *learning dynamics* in order to inform themselves and develop the strategy.

The complexity of the external context and the confusion and lack of strategy content internally, described as a strategic puzzle, indicate that it was impossible to determine the electro-hydraulic system strategy *ex ante*. Traditional strategic analysis and planning seem to have little meaning in this situation. By contrast, the *ex post* definition of the strategy was easier. This factor explains why the strategy commanded general and full support towards the end of the process, while the views in the two sub-processes had differed radically in the beginning and during much of the process.⁶⁶ Hence, with hindsight there was a clear temptation to rationalize; *ex post* virtually everyone was a supporter of the successful strategy.

What is important is that the approach in each of the two sub-processes towards the strategic puzzle clearly differed. The different mechanisms used in the two sub-processes to probe and interpret the environment seemed to play a crucial role. The more peripheral group, which supported the non-mechanical system and electro-hydraulic system strategy, had no special insight, nor did the specific strategy seem to involve a major gamble, either. Rather, the important difference between the two processes concerned their inherent actions, the knowledge assimilated and the ways of developing the strategic puzzle and their interpretations of it. Hence, strategy process and strategy content appeared to be connected. In this regard the peripheral groups' focus on customers and on cooperation with actors outside the traditional boundaries of the industry were particularly important.

A quick appraisal of strategic management theory in relation to the in-depth case of strategy creation confirms some indications of the weaknesses first noted in the pilot study. The literature on strategy formulation did not apply. The strategy did clearly not follow a specific plan. As regards strategy formation it seemed more applicable since the strategy development involved an incremental purposeful process, but it did not seem to be an environmentally governed process. On the contrary, the strategy was intentionally propelled within a clearly identifiable strategy sub-process.

⁶⁶ These differences and the conflict between the subgroups may partly explain why the new President had to resign while the former one returned and continued the electronic coupling strategy.

As for strategy content, the theories appeared not to be entirely appropriate. Strategy was not dominated by an intra-industry maneuvering process to reduce competition and increase entry barriers or by any other collusive arrangements. Furthermore, Couplet did not seem to have any specialized and non-imitable resources and capabilities on which to build. *Peripheral* resources, capabilities, industries and actors seemed to play a major role in the creation of the strategy. This observation is in contrast to the pivotal role of the prevailing industry, core resources, and central (top) company actors according to the most widely accepted theories of strategic management.

The brief analysis conducted here appears to confirm the paradox highlighted in the introductory chapter. It seemed as if the top and centre of the organization did not play the central role in developing the strategy, and resources and industries outside the existing ones that appeared to be more important. If these observations are correct, certain explanatory as well as normative aspects of established strategic management theories are challenged. This initial analysis appears to indicate that strategic management theory can not fully explain strategy creation and change. However, this preliminary finding is far from a definitive conclusion. Strategic management theories need to be examined much more thoroughly in light of these observations.

The empirical analysis of strategy creation, its form and character, and its origins, drivers and barriers will continue. The findings regarding strategy context, content and process will be further examined and compared in the next stage of the study, the multiple retrospective study, beginning in Chapter Seven. First, however, strategic management theories will be evaluated in relation to strategy-creation. The next two chapters more closely examine theories of strategic management and organizational change in relation to strategy creation, with special reference to the case of Couplet and the non-mechanical system. The evaluation will relate to how these theories explain and provide normative advice about complex foresight horizons and strategy creation; it will also discuss the obstacles encountered in this task. Chapter Five focuses on strategy-content theories, while Chapter Six examines strategy-process theories.

Chapter 5

STRATEGY CONTENT THEORIES AND STRATEGY CREATION

5.1 Introduction

It was concluded in the first phase of the study that some strategic management theories appeared to be challenged when confronted with complex foresight horizons, strategy creation and the relationships between strategy content and strategy process. The single in-depth case of Couplet's entry into and development of non-mechanical system, electro-hydraulic system and trailer surveillance systems confirmed the indications of some weaknesses in strategic management theories and perspectives. The development of strategy did not follow a specific plan. It was rather an incremental process, but it did not seem to be an entirely environmentally dictated process. It was not dominated by maneuvering within the industry in order to reduce competition and increase barriers to entry, and Couplet did not seem to have any specialized and non-imitable resources and capabilities on which to build.

The paradox and the questioning of two fundamental strategic-management assumptions highlighted in the introductory chapter appeared to have some relevance. First, peripheral organizational units and actors seemed to be pivotal in the development of strategy development, while senior and corporate management played a more modest role and even resisted it. Second, peripheral resources, capabilities, industries and actors, rather than prevailing industry and resource structures, appeared to play an important role in the creation of the strategy. These observations regarding possible weaknesses in strategic management theories need to be examined thoroughly.

As emphasized in the introductory chapter, it might be unreasonable to expect strategic management theories to explain strategy creation and strategies involving complex foresight horizons, or to explain the role of peripheral sections, resources and industries in strategy creation. However, few would deny that complex foresight

horizons are at the core of strategic management. Most would also agree that the firm's relationship to its environment, and interaction with it, are also central issues. In fact, strategic management is often defined in terms of these aspects. They form the basis for two of the most widespread and acknowledged definitions of strategy, the *hierarchical* and *matching* definitions (Barney, 1997).

The hierarchical definition emphasizes that strategic management concerns important and complex decisions for the long-term future, as distinct from short-term tactical and operational considerations. The matching definition stresses that strategic management focuses on the balancing between the firm and its environment. Thus, it would be quite unsatisfactory if strategic management theories were unable to explain strategies involving complex foresight horizons and the role of peripheral sections, resources and industries.

A comprehensive investigation of these issues is therefore required. In this chapter and the following, strategic management theories will be evaluated in regard to complex foresight horizons, strategy creation, the role of peripheral sections of the firm and the content – process relationship. The purpose is to evaluate the status of contemporary strategic management theories as regards strategy creation. Moreover, if strategy process and content are more intimately linked in practice than in theory the two strategy directions of strategy content and power need to be examined in order to find out what the common denominators might be. Maybe a point of contact between “American based” strategy content and “European based” strategy process research can be found. Another more general aim is to put the current study into perspective and relate it to other competing views. Unfortunately models in strategic management and organizational theory often do not connect to other theories, which limit the development of the fields, as Pfeffer (1997, p. 80) recently has remarked regarding various models of behavior in the organizations literature: “Perhaps the greatest difficulty is that the models often seem to simply ignore each other.”

It was established in the introductory chapter that the strategic management field is quite fragmented. There is not much agreement among strategy theorists concerning the definition of strategy or what strategy is about. There are, however, two fundamental questions of strategy that are discussed in both strategy-content and strategy-process research: *where to go* and *how to get there*.

For the most part these fundamental questions have been treated as separate, and they have been answered in quite diverse ways by the two fundamental directions of strategy research, strategy-content and strategy-process respectively. In this chapter and the next, the two questions as interpreted in strategy-content and strategy-process research are discussed in relation to the case of Couplet's entry into and development of non-mechanical system and trailer surveillance systems.

As a framework for the appraisal, a short evaluative overview of the various parts of strategic management and organizational change theories is provided. It is followed by an evaluation of each view and a discussion concerning its relationship to strategy-creation in general and the Couplet case in particular.

First, strategy-content research is discussed in terms of the industrial-organization tradition, which focuses primarily on the question of *where to go*. Thereafter, the discussion turns to the question of *how to get there*, which is addressed in resource-based views of strategy. Resource-based views are treated more thoroughly, since they predominate in much of contemporary thinking on strategic management, and since they specifically focus on the firm, which is of special interest when strategy creation is considered. In the next chapter, an overview of strategy-process research is provided, including the strategy formulation or planning perspectives, which focus on the question of *where to go*, and the strategy formation views, which emphasize *how to get there*.

5.2 Strategy Content Theories and Economics

Strategy-content research is highly influenced by economic theory (Schendel, 1988; Montgomery, 1988). Essentially two main avenues of economics that have affected strategic-management thinking can be identified. The most influential have been the industrial organization (IO) perspectives. These views take the environment as the point of departure in strategy analysis and primarily concern the strategic question of *where to go*. The other, which is still in its development and has had its greatest impact during the last decade, is constituted by the resource-based views (RBVs). The latter emphasize unique firm resources and capabilities and particularly concern the second question of strategy, *how to get there*.

Traditional neoclassical economics assumes away the very core questions of strategic management.⁶⁷ Some of the principal concerns in the study of the firm, such as informational and technological uncertainty, limited rationality, learning, and transaction costs, do not exist in the world of neoclassical economics (Teece, 1984).⁶⁸ Not that neoclassical models fail in modeling strategy or that they are "unrealistic" in this sense. Neoclassical economics has simply not been concerned with analyzing strategy-making. Strategic management focuses on strategic choices available to general managers of individual firms: allocation of resources, selecting products and markets, competition or cooperation, etc. In contrast, neoclassical economics emphasizes determination of price and output levels on the market as a whole, assuming away such core issues of strategy as uncertainty, coalitions, processes, and politics. In a neoclassical world managers maximize with full knowledge of all possible choices and their consequences. In this way strategy is reduced to a set of maximization and optimization problems in an equilibrium, rational and ordered, non-complex context. This model is clearly not particularly useful for strategy-making.

However, strategy-content theories have been highly influenced by the thinking in economics during the last two decades. Therefore, economic models and their assumptions need to be discussed and scrutinized in an evaluation of strategic management theories. In this connection, it is important to note that much of neoclassical microtheory has been revised during the same time as strategy-content theories have been developing. The study of business organizations and principles of economic organizations has made significant advances. Industrial economics, transaction-cost economics and economics of organization (cf. Besanko et al., 1996; Milgrom and Roberts, 1992) have provided a more solid foundation in economics for strategic management theories. Despite these accomplishments, however, it seems as if strategy-content theories contain certain weaknesses, especially in regard to strategy

⁶⁷ For an overview of the cross-fertilization between strategic management and economics see Rumelt et al. (1991) and Teece (1984).

⁶⁸ In an evaluation of neoclassical economics and strategy Rumelt (1984, p.559) argues: "The problem with the neoclassical theory is that it is not really a theory of the firm. The existence of the firm is actually problematic within the axiomatic framework of the theory and must be justified by reference to entrepreneurship as a fixed factor. What the theory actually deals with is the workings of the price system in a setting in which nothing but prices need be known."

creation and complex foresight horizons. Furthermore, some of the assumptions made by economists appear to be erroneous in a strategic management setting.

5.3 Industrial Organization Perspectives - "Where to go".

5.3.1 Classical Industrial Organization (IO)

Classical *industrial organization theory*, based on the well known "Structure - Conduct - Performance" (SCP) paradigm (Scherer, 1980), provides further assistance where neoclassical economics falls short when it comes to the individual firm and the modeling of strategy. Developed by Mason (1939) and later Bain (1956), this theory partly overlaps with traditional neoclassical microeconomic theory but differs from it, especially by taking a larger number of variables into consideration.⁶⁹ In this respect, the explanations and models provided by industrial organization theory are more applicable to the "real world" with their rich quantitative detail. The reasoning is that a range of different industrial attributes determine firm conduct and in the end societal and firm performance (Caves, 1982; Scherer, 1980).⁷⁰

However, even if more aspects are considered, these models are still of little help to a student of the firm and of strategy, since they do not take explicit assumptions about conduct into consideration. Classical IO argues that conduct and performance are determined by certain structures, but possible relationships between performance and conduct and between conduct and certain structures are often ignored.

The theory can be characterized as a static system that does not take endogenous processes into consideration. The firm is treated very much as a black box, in that processes inside the firm are ignored as in the neoclassical case.⁷¹ In sum,

⁶⁹ Note that the original goal of this research was to describe conditions under which perfect competition would prevail in an industry. One objective was to be able to advise governments as to which industry sectors needed regulation to enhance competition.

⁷⁰ Factors in the *industry structure*, such as the number of sellers and buyers, product differentiation and barriers to entry, influence firm *conduct* (e.g. price behaviour, product strategy, R&D), which in the end determines societal *performance* (production and allocation efficiency).

⁷¹ There are single models that take simple assumptions about conduct into consideration. To begin with, there is the Cournot- (Nash) equation, resulting in the Cournot equilibrium, which basically assumes that no single firm can improve the payoff by deploying a different strategy given the strategy choice of rival firms. Furthermore, the Bertrand equilibrium and sequential moves (Stackelberg, 1934) also involve more dynamic and endogenous firm elements. However, these models still assume a very limited set of decision

underlying the classical IO model is the deterministic view that the industry successively adapts to conditions in its environment (Jacquemin, 1987). However, there is an interesting contrast between the complex environment to which firms - according to IO - are forced to adapt, and the ordered, non-complex neoclassical world in which firms easily optimize.

The role of the individual firm is more important when classical IO is translated into business policy. This economics-based tradition has had a significant impact on strategic management theory and has clearly contributed to the development of the field (e.g. Porter 1980, Porter 1981). It recognizes that while the firm's performance is critically dependent on the characteristics of the industry environment in which it competes, firm behaviour can have an impact on industry structure. Firms are thus allowed a more active role in this interpretation, even if they still have to adapt to given conditions in their industry. In order to obtain high returns, firms must accommodate to the structural characteristics of the industry, but they can also try to raise the barriers to entry, reduce the number of competitors, increase product differentiation, etc. In particular, the task for the firm is to position itself in respect to five competitive forces: threat of entry, substitution threat, bargaining power of buyers, bargaining power of suppliers and rivalry among existing competitors (Porter, 1980). These factors determine competition and the profit potential in an industry according to the view.

5.3.2 Couplet's Non-mechanical systems and Trailer surveillance Systems Strategy in an IO perspective

The IO framework and the five-force model (Porter, 1980) could perhaps provide explanations and normative advice regarding the non-mechanical system and trailer surveillance systems industry *ex post*. Some industry structure factors could be used to describe how the current status of the industry evolved. For example, the truck sub-suppliers reacted to the power of customers; they raised barriers to entry and adopted the electro-hydraulic system substitute.

variables for each firm and have little implication for strategic management theory. They can be classified as static models (Besanko et al., 1996; Reid, 1987).

However, it is more difficult to determine which specific factors were decisive; in particular, it seems as if more endogenous factors played an important role as well. A number of Couplet's competitors were far ahead on the electro-hydraulic system experience curve and were manufacturing on a much larger scale. Moreover, important entrepreneurial moves may be excluded in an IO-based analysis. One such move was the initiative by electro-hydraulic system supporters at Couplet, and especially the new President, to develop a Mini coupling, which had an important influence on the company's future and that of the European section of the industry. The incremental movement by Couplet and other actors into the electro-hydraulic system industry is difficult to capture within the IO framework. This process involved more than a market-power game in which firms were progressively acquired and merged in order to monopolize markets and knowledge. It was based more on cooperation and successive development of internal resources and capabilities. Couplet's extensive cooperation with certain customers (i.e. Roadstar) was of decisive importance but might be overlooked in an IO-based analysis. Furthermore, the fact that Polychem, a chemicals, oil and food additives producer, assumed a major role illustrates the importance of actors from other, often non-related, industries and new firm-specific resources and knowledge. Neither of these aspects is considered in IO approaches.

In terms of *normative* advice, Couplet would have faced a fundamental problem in using a five-force or IO-based analysis: there was no non-mechanical system, electro-hydraulic system or trailer surveillance systems industry to analyze in the mid- and late eighties. Later the company could, perhaps, have assessed early barriers to mobility, but potential entrants, competitors and suppliers in the industry, except those in the truck industry sphere, were largely unknown.

5.3.3 Classical IO Perspectives – a Summary

The principal problem with classical IO remains its translation into business policy, its one-sided focus on exogenous and industry factors.⁷² A fundamental challenge to the

⁷² However, it should be acknowledged that Porter (1980) discusses capabilities and many other important strategy factors.

industry-level approach is posed by findings which are held to show that firm-level differences account for more of the variation in performance than do industry differences (Rumelt, 1984; 1991). In this respect the IO based strategy views is challenged for not including an adequate theory of the firm (Foss, 1996). Several of the underlying premises for the competitive-forces view, such as the meaningfulness of industry boundaries, the determination of competitive rules by the industry structure and cash as the only constraint in repositioning and be questioned.⁷³ Another limitation is that no one seems capable of explaining how to achieve the desired market position (e.g. Hirsch et al. 1991). Other factors might be questioned as well, such as the establishment of a monopoly position as the primary goal and the one-sided focus on squeezing competitors, suppliers and buyers. There appear to be little or no room for cooperation or complementarity among competitors, buyers and suppliers in the IO framework. In practice, on the other hand, such collaboration is widespread, as indicated in the Couplet case. A further complication is that the Porter model is implicitly based on a planning view of strategy (Mintzberg, 1994) and in effect does not consider implementation and strategy process.⁷⁴

5.3.4 More Dynamic Industrial Organization Views

Porter (1991) proposes three promising areas as regards the creation of strategy and proposes several issues for research towards a dynamic theory of strategy. One of the promising areas is the resource based views (RBVs), discussed in the next main section. The two others are theories focusing on irreversible commitments and game theory. Classical IO has been developed further into what has been named the "*new or modern industrial organization theory*". This "second wave" of the IO school has been primarily theoretical, using microeconomic theory and new methodological approaches, especially game theory. It has been held that *contestable market theory* (Baumol 1982, Baumol et al. 1982) - stating that threats of entry, when above-average returns are earned, deter firms, including monopolists, from earning abnormally high returns - would largely

⁷³ This refers to Teece, Pisano and Shuen's (1990, p. 5) evaluation of the framework.

⁷⁴ Moreover, some other aspects appear to make the five-force model static. It essentially provides an historic picture and neglects political power, institutional factors, and complementary actors and

reform the IO area.⁷⁵ However, this approach has been criticized on a number of accounts (Jacquemin, 1987; Teece, 1984; Shapiro, 1989).⁷⁶ The fact that sunk costs are not taken into consideration is especially problematic for strategic management⁷⁷.

There are several approaches within this new IO theory which recognize that the outcome for the firm and the industry is dependent on deliberate strategies as well as the external order. These theories thus focus to a greater extent on the intermediate variable in the SCP paradigm⁷⁸.⁷⁹ A vast number of different game situations and equilibria have been depicted illustrating how firms might behave, what the outcome will be, and also how they should behave in order to maximize profits. Shapiro (1989) went so far as to name this avenue of the new IO "the theory of business strategy," referring to the models of business rivalry and their emphasis on the dynamics of strategic actions and the role of commitments. The focus in these models is on strategic investments, pricing strategies, and signaling and control of information, in which strategic, long-lasting commitments and tactical, short-term responses are distinguished.⁸⁰ Ghemawat (1991) has translated the direction into a more managerial form and stresses commitment – the tendency of strategies to persist over time – as the focal point of strategy. The focus is on locating commitment choices. Since commitment implies lock-in, inertia and path dependencies, decisions and choices

alliances. In addition, it is unclear what an "industry" is. The definition of an industry is especially complicated in new and changing environments.

⁷⁵ Collis (1991) presents the most "infamous" example, the airline industry (deregulation later proved the argument to be wrong) and discusses the relationship of the theory to strategy and resource-based models.

⁷⁶ Jacquemin (1987, p.28) argues that the model rests on a number of "unreasonable assumptions," and Teece (1984, p. x) criticizes the theory since it ignores the role of irreversibilities, strategic interactions and demand variability: "...whenever irreversible investments in physical and human capital must be made, a market is unlikely to be contestable".

⁷⁷ Shapiro (1989, p. x): "This translates into a complete absence of strategic behavior, since any action that is costlessly reversible has no commitment of strategic value." Specifically the presence of sunk costs and irreversible commitments has later been held to be at the core of strategy. Ghemawat (1991) argues that strategy is the competitive struggle to make sunk-cost investments.

⁷⁸ In other words, economic agents can themselves influence the business environment, including the market structure. Hence, the outcome in the form of organizations and industries results from deliberate strategies as well as the external order. Accordingly, it is recognized that there is not one single theory of oligopoly, but rather many theories of oligopoly.

⁷⁹ Within "new IO" there are both models of oligopolistic markets which face endogenous changes when economic agents modify their environment - strategic moves by oligopolists - and also models in which industries experience changing conditions independently of their own behavior and subsequently adapt to them - exogenous sources of industry dynamics (cf. Jacquemin 1987).

⁸⁰For further discussion see Shapiro (1989), Schmalensee and Willig (1989) and Besanko et al. (1996).

with this character are strategic and need to be considered carefully. In a quest for strategy creation explications the challenge of course becomes: how can one locate and determine those decisions and choices that involve commitments. It is somewhat difficult to imagine how by analysis it would be possible to figure out the important commitment choices

In the new IO, *game theory* has clarified strategic interactions between firms. This modern IO has improved economic models in terms of strategic choices compared with neoclassical and classical IO models. The various theories of oligopoly capture a large number of situations recognized in strategic management. Models of dynamic pricing rivalry, for example, explicitly acknowledge competitive moves and countermoves over time (Besanko et al., 1996).

Hence, it is indisputable that modern IO and game theory have contributed significantly to strategy theory. However, much of the research is quite abstract, focusing on sophisticated industry moves and countermoves, and based on quite restrictive and unrealistic assumptions. In general the research is lacking in empirical evidence, a shortcoming which is also recognized by advocates of the theory (e.g. Shapiro, 1989).⁸¹ Once a certain level of complexity is reached, as in strategy creation, it appears as if game theory is not entirely appropriate. In addition, the new IO appears sketchy on firm-internal processes and development of skills, since firms are usually assumed to have homogenous capabilities. Consequently, the new IO does not seem to show what is inside the black box of the firm, as it does not consider the unique capabilities of the individual firm, but takes them as given (Teece et al., 1997).

While less highly ordered than neoclassical economics, the new IO exhibits a non-complex world. It has provided new insights into strategic management issues, but it does not appear to offer much help in an empirical setting compared to traditional economics views. It seems as if the new IO can not explicate and add much more in terms of explaining strategy creation and the case of the non-mechanical system, electro-hydraulic system and trailer surveillance systems industry, since these phenomena are too complex to be captured by the models of this school. In terms of its more applied and *normative* interpretations (Dixit and Nalebuff, 1991), it does not

⁸¹ Shapiro (1989) argues that the use of game theory in business strategy has reached a point of diminishing returns and that more empirical work is needed.

appear that these would have been of much assistance to Couplet, as earlier discussed in Chapter Two.

To summarize, it seems to be difficult to introduce the complexity and dynamics of strategy creation into the economic models discussed so far. These focus mostly on exogenous factors and their deterministic influence on firm behaviour and strategy, even if some theories also consider more endogenous factors. The models seem not quite able to capture the essential aspect of strategy involving complex foresight horizons. They can only partly describe and explain the complexity and development dynamics in the creation of Couplet's strategy as described in the prior chapter.

The economic models discussed appear to leave out several fundamental elements. Factors like entrepreneurship, resource heterogeneity, co-operative arrangements and internal organization, all of which played an important role in the development of strategy, are neglected. The IO models require a certain level of stability. When it comes to normative recommendations they seem to be of little assistance to Couplet in regard to its third strategic challenge, the non-mechanical systems issue. This strategic issue or puzzle involves too complicated a mixture of exogenous and endogenous factors and complex foresight horizons to be captured by the models and their normative interpretations. In particular, an industry analysis is quite meaningless when neither the industry nor its borders have been defined. Game-theory solutions also require a more defined setting in terms of strategic questions and alternatives, as discussed in Chapter Two.

At the same time, it is important to emphasize that the theories discussed can be of assistance in situations that are more defined and clear, as with Couplet's second strategic issue, globalization. In that case an analysis in terms of Porter's (1980) five-forces did play a role. However, by that time the strategic issue was well defined, and, furthermore, strategy implementation subsequently changed the analysis and the company's plans.

5.4 Resource Based Views (RBV) – "How to get there"

5.4.1 Foundations of RBVs -Transaction Cost Economics and Evolutionary Economics

The sub-field of *transaction-cost economics* (TCE), primarily developed by Williamson (1975, 1985), building on Coase (1937), is another area of economics that has influenced strategic management theories. The focus is on costs of transactions and suitable structures for conducting transactions, i.e. markets or hierarchies.⁸² This approach clearly offers new insights concerning strategy and the role of the firm. It can, however, in the context of strategic management be questioned on some accounts: for not taking hybrid forms of governance into consideration,⁸³ for assuming the goals of the transactions as given, and for not considering the importance of the social relations connected with business activities.⁸⁴ The efficiency assumption is especially problematic for strategic management, and bounded rationality, even though explicitly incorporated by TCE, is commonly used as a general limitation.⁸⁵ While TCE covers a certain degree of endogenous complexity, it does not include some core strategic-management activities, such as the development of knowledge and beliefs; hence, there still seems to be much about firm and management behaviour which TCE does not explain.

The "economism" of neoclassical and IO theories and the "managerialism" of TCE appear unable to address the fundamental questions in strategic management, but when "behaviouralism"⁸⁶ is introduced, it adds explanatory value to these theories. In their evolutionary economic approach Nelson and Winter (1982) accept and use many ideas from organizational behaviour, but also build on transaction-cost economics. The evolutionary economics approaches move away from maximization models of the

⁸² The reasoning is that uncertainty, idiosyncratic knowledge and opportunistic behaviour lead to inefficient or unfair market prices and contracting and that organizations result as a consequence of this market failure.

⁸³ Perrow (1986, p.255, referring to a talk by Sidney Winter) remarks: "The continuum from market to hierarchy is less like a ruler than a football, with a vanishingly small pure type at each end, and a swollen middle that mixes the two".

⁸⁴ See Perrow (1986, pp.241-257) for a review of the criticism of transaction-cost economics and Kogut and Zander (1992; 1996) and Zander and Kogut (1995) for an alternative theory of the firm and a discussion of transaction costs.

⁸⁵ It is usually presumed that "...the most efficient (i.e. rational) forms emerge!" (Schoemaker, 1990, p.1185).

⁸⁶ Nelson and Winter (1982, pp.34) distinguish between "managerialism" and "behaviorism" in the positioning of their theory.

firm and instead focus on organizational capacities as embodied in routines.⁸⁷ Firm heterogeneity becomes important, in sharp contrast to the homogeneity of firms within industries in IO approaches (except perhaps for differences of scale). Firms with certain routines may perform better and are selected by the environment. The implication is that firm history is significant and that strategy and structure can neither easily nor quickly be changed. However, again, the focus is more on an industry level of analysis rather than on a firm level. Evolutionary pressures force the firm to adapt passively. In this respect, the business environment seems, once more, to be too complex for managers and the firm to handle.⁸⁸

Nelson and Winter's (1982) evolutionary ideas could also be described in neo-Schumpeterian terms. If the firm and strategy processes are to be studied, entrepreneurship, largely ignored in traditional economic models, need to be a central concept. Entrepreneurs have access to superior information and are able to create unique new skills and capabilities. In a process of "creative destruction" (Schumpeter, 1934), the entrepreneur is driven more by personal objectives, creation and intuition than by profit maximization alone. Accordingly, the strategic firm, according to Rumelt (1984), is characterized by a bundle of linked and idiosyncratic resources and resource-conversion activities coordinated by the entrepreneur. He remarks that the omission of entrepreneurs from economic theory stems from the fact that it is difficult to determine welfare implications from Schumpeterian rivalry and that one encounters severe problems when modeling it.⁸⁹ This avenue of research is promising for strategic management and strategy creation, since it recognizes the importance of the strategic reasoning and thinking process as opposed to deduction from a set of strategy

⁸⁷ Organizational routines, which basically play the same role as genes do in biological evolutionary theory, define the possible behaviour of firms (organisms) and are developed and improved over time.

⁸⁸ To use biological terms, the approach has been more concerned with *phylogenetic* theory, explaining evolutionary change in a population, rather than *ontogenetic* theory, explaining changes in a single organism (Foss, Knudsen and Montgomery, 1995).

⁸⁹ Despite agreeing on the great difficulties in modeling this kind of rivalry, Rumelt (1984) does not see them as impossible to solve, and presents a model with entrepreneurs as rational maximizers, but with bounded knowledge - a model of "uncertain imitability". The model presents entrepreneurship as the creation of new production functions and generates firm heterogeneity as an outcome rather than assuming it as a given. The opposite is the neoclassical case, in which firms select their production function from a known bundle of technological possibilities. In this case there is an irreducible uncertainty connected with the creation of a new production function. Thus, firms entering the industry show different efficiencies, and the most efficient ones earn above-average rents and survive. Rumelt (1984) concludes: "...the more efficient firms have "created" or discovered unique skills and strengths and will maximize

alternatives in a plan. It also seems more able to cope with complexity and strategy creation. Nevertheless, Schumpeterian economics, like modern evolutionary economics, is more concerned with analysis at the industry and societal levels than at the firm and strategy levels.

5.4.2 Resource Based Views – RBVs.

TCE, evolutionary economics and Schumpeterian competition have not been directly translated into strategic management theories. However, they have been applied to some extent in the development of the *resource-based view* (RBV) of strategy. The resource-based view attempts to show what is in the "box" which constitutes the firm. The view focuses on inter-firm differences in profits rather than inter-industry differences as in IO (Rumelt, 1984; Lippman and Rumelt, 1982; Rumelt 1991). It identifies how firms exploit unique resources and capabilities and focuses on the development of new capabilities (Grant, 1991; Teece et al., 1997).

This perspective of the firm originates with scholarly traditions that view industry structure as reflecting efficiency outcomes, rather than market power, and performance as determined by the significance of unique firm-specific resources. The firm is characterized in terms of its resources rather than its industry position. Firm-specific resources and capabilities determine the direction of the firm and its growth (Penrose, 1959). In emphasizing firm-specific capabilities and isolating mechanisms as determinants of firm performance, the perspective differs from the models discussed earlier in that it recognizes that capabilities and resources are heterogeneously dispersed among firms (Rumelt 1984, Teece 1984, Wernerfelt 1984).⁹⁰ In addition, firm resources are considered to be historically linked to the firm. A firm's previous investments in resources, and its routines, constrain its behaviour. The firm cannot quickly develop new resources and capabilities, and some assets are impossible to acquire, as there are no markets for them (e.g. reputation, customer

their values by seeking other areas of activity wherein these special skills may also be of value." See also Lippman and Rumelt (1984).

⁹⁰Teece et al. (1990, p. 13) note: "...firms with superior capabilities and/or organizational structures being profitable not because they engage in strategic investments that may deter entry and raise prices above long-run costs, but because they have markedly lower costs, or offer markedly higher quality or product

trust, dealer loyalty, firm-specific skilled labour, Dierickx & Cool, 1989). These factors reduce the range of a firm's possible strategic behaviour. Over a relevant time frame, firms are limited by their unique resources and capabilities, since the development of capabilities is an extremely complex process (Dierickx & Cool, 1989).

One difficulty with the RBV might be to define exactly what a resource, capability or competence actually is. If the definition is restricted to technologically based competencies, the view is of limited use in the study of strategy making. On the other hand, if the definition is broadened, there is a danger of including virtually all kinds of resources and competencies. Firms with competitive advantages are determined by any identified competence. The perspective risks becoming tautological in this respect: "Firm resources include all assets,...controlled by a firm that enable [it] to conceive and implement strategies that improve its efficiency and effectiveness" (Barney, 1991, p. 101) and "...core capability as the knowledge set that...provides a competitive advantage" (Leonard-Barton, 1992, p. 113).

Different definitions are found in the literature on RBV. Some are quite broad (e.g. Wernerfelt, 1984, Barney, 1991), including virtually all assets which are tied to and controlled by the firm (organizational capabilities, in-house technology knowledge, machinery, brand names, etc.). Others are more narrow (e.g. Prahalad and Hamel, 1990) and mostly involve specific technologies. A related complication is the infinite-regression problem of RBVs (Collis, 1994). There is simply no logical end to the search for the ultimate source of competitive advantage. There are always other sources of competitive advantage that back up each core competence and, in turn, yet other sources behind them, etc.

Two, partly separate, currents of resource-based research can be identified, a "classic" and a more "dynamic" one. The "classic" current involves stronger economic assumptions. The distinction, which is not an exact one, has previously been recognized by several researchers (e.g. Levinthal, 1995; Schulze, 1992; Teece, Pisano and Shuen, 1997). It reflects the observation that the "classic" resource-based views have more of a foundation in formal economics and are more concerned with the firm's existing

performance. This approach focuses on the rents accruing to the owners of scarce firm-specific resources rather than the economic profits from product market positioning."

resources, whereas the other current is more related to the development of the firm's capabilities;⁹¹ in this sense the latter is more "dynamic" than the former.

According to Schulze (1992), the "classic," or "strong," form assumes efficient markets and focuses on resources whose unique qualities persist in equilibrium. Also important in the more traditional RBV interpretation, besides a certain conception of equilibrium, is the assumption of rational choice. The more dynamic, or "weak," form of RBVs assumes that markets are less efficient and that "...relative resource heterogeneity can be a source of value." (Schulze 1992, p.38). It is important to stress that the division into "classic" and more "dynamic" RBVs is somewhat arbitrary.⁹² An alternative dichotomy might be between resource-based and evolutionary approaches to strategic management (Foss, Knudsen, Montgomery, 1995).

Wernerfelt's (1984)⁹³ discussion regarding resource-position barriers as analogous to entry barriers, in one of the first writings in the area, is associated with the classic tradition. The task for firms is to find sustainable resources in terms of resource-position barriers and then to exploit the resources. This line of thinking is found in more formal presentations of RBVs (e.g. Montgomery and Wernerfelt, 1991, 1988). It holds that rents originate in factor market failures or in the attributes of discrete resources (Schulze, 1992), and it is more concerned with the sustainability of rents than with their creation. This feature, however, limits its usefulness for strategic management theory and especially strategy-creation, in which the process of development is crucial.

The use of firm-specific resources to maintain competitiveness is central in the models of this school (Barney, 1991). Underlying the reasoning is an assumption of the market as efficient, with competitive forces eliminating heterogeneity of resources that

⁹¹ See Amit and Schoemaker (1990, pp. 35-36) for the distinction between resources and capabilities.

⁹²Schulze (1992) recognizes that his distinction between the "strong" and "weak" forms is somewhat unclear and subtle. The interdependence between the two forms is emphasized in the conclusion (Schulze, 1992, p.40): "The weak-form addresses the issues of creating and replacing wealth-generating assets...the strong-form addresses the issues of identification of under-employed resources, exploitation, and protection of those sources of wealth...both models are necessary to fully describe the role of resources in competitive behavior". The main reason for highlighting the distinction is that it, as Schulze (1992, p.40) concludes, "mediates debate between behavioral-based and economic-based strategy researchers regarding this theory". Peteraf (1994) criticizes Schulze's (1994) distinction based on differences in rents and calls for a more integrative approach.

⁹³ Wernerfelt (1984, p.175) was one of the first to introduce the resource-based view of the firm: "So firms need to find those resources which can sustain a resource position barrier, but in which no one currently has one, and where they have good chance of being among the few who succeed in building one. They have to look at

are not scarce, imperfectly mobile, non-substitutable and possessed by the firm (Barney, 1991).⁹⁴ Even if the firm could buy the assets needed on the factor market, it would have to pay a price covering the rents yielded by those assets, unless the firm either possessed *ex ante* special information and/or is simply lucky (Barney, 1986a).

The efficiency assumption seems to be less appropriate in terms of explaining strategic management and strategy creation in particular, since frictional forces, rather than quickly effective competitive forces, often seem to play a pivotal role. The "classic" RBVs all assume an equilibrium of some sort (Levinthal, 1995), and certain writings can even be considered essentially neoclassical (e.g. Barney, 1986a). In accordance with the earlier discussion on neoclassical economics, this current within RBVs seems to be less fruitful for the development of strategic management theory, especially regarding strategy-creation.

5.4.3 Couplet's Non-mechanical system and Trailer surveillance Systems Strategy in light of RBVs

In retrospect it might be possible to determine specifically what resources and capabilities were crucial for the development of the non-mechanical system, electro-hydraulic system and later trailer surveillance systems industry. In an analysis of the Couplet case, it seems as if prevailing technological resources and capabilities were not decisive. Couplet did not have any of the core technologies required.⁹⁵ An examination of the industry today, however, reveals that truck trailer incumbents probably had some advantages in terms of their resources and capabilities, since the dominant actors have their roots in the truck trailer industry. It is quite difficult, however, even after the fact, to determine exactly what the core competencies might have been.

One interesting resource base could have been testing equipment and laboratories,⁹⁶ which entrants from other industries, like oil and chemicals and

resources which combine well with what they already have and in which they are likely to face only a few competitive acquirers."

⁹⁴ Indeed Barney (1991, p.116) notes: "...strategic management research can be perfectly consistent with traditional social welfare concerns of economists."

⁹⁵ As earlier described in Chapter Four: "...we did not have the technology. We did not have electronics and no hydraulic devices, both were necessary" [Couplet Senior Manager].

⁹⁶ "...but what we had, and we clearly underestimated that asset from the beginning, was testing equipment and the knowledge concerning how the trailers behave" [Couplet Senior Manager].

hydraulic pump, electronic sensor companies, and cylinder manufacturers, did not have. On the other hand, Polychem, the successful US electro-hydraulic system company based on chemicals, oil and food additives, possessed no extensive capability in this area, at least not by comparison with the truck companies. In addition there is another, more obvious, resource or capability that trailer related companies had, but that Polychem lacked: marketing, sales and customer relations. Hence, there seem to be some limitations in using RBV explanations for strategy creation in this case.

The narrow focus of RBVs on internal resources and skills misses another important factor in strategic management and strategy creation: customers and other external actors. Customers, especially Roadstar, played a major part in Couplet's entry and growth into the electro-hydraulic system industry. Demand from established customers, and cooperation with them, can spur entry into completely different products and technologies, "...each requiring the assimilation of new and previously unexploited skills and resources." (Zander and Zander, 1999). Couplet cooperated extensively with external actors in order to generate the resources and capabilities needed to grow in electro hydraulic systems. Much of the necessary resources were thus obtained from outside the firm. Some RBV proponents would probably argue that the customer relationship and the customer's competencies also amounted to a core competence for Couplet. However, the terms "competence" and "resource" seem to lose their meaning if relationships and customer competencies are included. Clearly, there are problems of definition and infinite regression in the RBVs.

The importance of relationships and interaction with customers is related to another possible shortcoming of more static RBVs - the tendency to overlook entrepreneurial initiatives and the generation of skills and resources. Although Couplet apparently did not have most of the resources and skills needed to start with, these were created through a successive combination of various areas of knowledge. Managers at Couplet combined not only internal skills and resources, but external ones as well, essentially coordinating factor markets with customers (Schumpeter, 1942). At the same time, it is important to note that strategy did not seem to be developed as a result of betting on a specific technology or strategy, but through specific actions, learning and interpretations by certain groups regarding the strategic puzzle

Some aspects of the single in-depth case seem to pose particular difficulties for the more traditional or classic interpretations of the RBV. It seems clear that Couplet had not been engaged in exploitation of resources, but in exploration for resources. In addition, the company's development into a world leader in electro hydraulic systems can hardly be described as a rational process. It was rather quite irrational, far from an optimization exercise based on a set of strategic resource alternatives. Still, the outcome was rather favorable. An irrational process resulting in a rational outcome is quite challenging for economics and economics-based strategic management, unless attributable to pure "luck" (Barney, 1986a). The notion of equilibrium is difficult to define in the Couplet context of gradual development of resources and market positions. The inertia that Couplet exhibited, especially in the beginning, is contrary to assumptions of market efficiency. Couplet and other actors were inactive for years in regard to non-mechanical system and electro hydraulic systems despite American legislation and moves by others. This inertia is quite far from the organizational flexibility held to exist in many economics-oriented RBV models.

If it is not easy to identify the decisive resources and capabilities after the fact, it was even more challenging to estimate what they would be *ex ante*. Hence, in *normative* terms both resources and capabilities were extremely difficult to determine at the outset. In fact, they lose much of their meaning in a strategic analysis or plan. It did not make much sense for Couplet to analyze its "core competencies," at least not from the start, since no one knew what they were or what they would be. It would have been tempting to analyze technologies, such as hydraulic pumps, of course, but it probably would not have occurred to management to analyze testing competencies. An assessment of resources and capabilities in terms of a "VRIO"⁹⁷ analysis for example (Barney, 1994), would have little meaning, since it was highly unclear which resources and capabilities to evaluate.

⁹⁷ "VRIO" refers to Barney's (1994) framework for evaluating firm resources and capabilities and refers to four questions or criteria that need to be fulfilled for a sustained competitive advantage to exist: Valuable? Rare? Costly to Imitate? Efficiently Organized?)

5.4.4 RBV Perspectives – a Summary

There are several obstacles in using RBVs, especially the more static RBVs, to explain strategy creation and as a foundation for strategic management theory. One obvious complication is posed by the problems of definition and infinite regression in RBVs. It is not entirely clear what constitutes a resource, capability or competence or how it in turn is generated by other factors.

Other complications relate to more "classic" or more static RBVs. Equilibrium constructs are fundamental to these views and facilitate their modeling. However, the notion of equilibrium is not compatible with what some scholars consider to be the foundations of resource-based views. Penrose (1959) and Schumpeter (1934, 1954), for example, even deny the existence of equilibrium states. Although far from all literature in this current of RBVs is purely "neoclassical," the focus on equilibrium conditions limits the understanding of *how* and *why* resources are differently dispersed and, especially, how these differences develop.

According to these views, strategy mainly involves the discovery and exploitation of existing imperfections. Once valuable, scarce, imperfectly imitable and non-substitutable resources are found, the issue becomes one of controlling and protecting them. This line of thinking does not seem to allow for developing or improving resources and capabilities. Essentially, rationality is constant and the same within and among actors. In this situation, when optimization is possible and, hence, strategic complexity is rather low, the question of strategy is actually of little interest (cf. Schoemaker, 1990). Management basically becomes irrelevant, as advantages can only be found in the resources already controlled by the firm.⁹⁸ The organizational-plasticity assumption weakens the usefulness of this current of research for strategic management theory. In fact Rumelt (1995, p. 101) argues that "...inertia, rather than plasticity is the norm".

The limitations of this category of resource-based perspectives in terms of its focus on equilibrium, rationality and flexibility have been recognized by several researchers that have evaluated economics-oriented resource-based views (Foss, Knudsen and Montgomery, 1995; Levinthal 1995; Rumelt, 1995; Schoemaker 1990;

⁹⁸ Barney (1991, p.117) counters this criticism by referring to managers as important interpreters of the firm's resources or, alternatively, the managers themselves can constitute those important resources.

Schulze 1992). When the area of investigation shifts from simple and static demand and supply of resources and assumes more dynamic properties, involving strategy creation and change, economics-based RBVs need to be complemented with approaches taken from other social sciences.

It is important to note that the limitations of classic RBVs often are due more to the fact that current economic theories are not well suited for modeling the more dynamic aspects of strategic management, than to an outright neglect of these aspects. In fact, the distinction between "classic" and "dynamic" RBVs is perhaps to be found more within the thinking of different authors, than from comparing them. Wernerfelt (1984), for example, emphasizes that the objective for firms is not only to exploit existing specific assets, but also to develop new capabilities; the same author (Wernerfelt, 1989) explicitly highlights process issues. Similarly, Dierickx and Cool (1989), in addition to stocks of resources, are also concerned with resource processes and flows, and, in particular, inertia in resource development. And there are promising tendencies in evolutionary economics (Nelson and Winter, 1982) in terms of modeling more dynamic properties. Still, economics seems to be of limited usefulness for modeling processes of knowledge, beliefs and politics, which is needed in a theory of strategic management, especially in regard to strategy creation. Rumelt (1995, p.103) acknowledges these limitations of borrowing "erroneous assumptions" from economics such as "...plasticity, rationality of collective action, and homogeneity of beliefs."

In sum, one major complication with RBV is the problems of definition and infinite regression. The definition of a resource, capability or core competence is unclear, and the factors generating it are even more so. There are four other possible weaknesses of more classic RBVs in explaining strategy-creation. The first is the focus on equilibrium, which essentially means that many aspects of strategy - such as uncertainty, processes of change and learning - are assumed away. The second, which is closely coupled with the first, is the assumption of rationality. If rationality is common among and within given actors, over time strategy becomes a maximization problem. The "management" in strategic management vanishes, and the "strategic" part becomes more tactical, an exercise in maximization with full insight into all possible choices and their consequences. The third is the one-sided focus on exploitation of resources, so that the whole question of creating and developing resources and capabilities is neglected;

thus, the exploration required by the strategic challenge is not considered. Finally, there is the assumption of organizational flexibility, the belief that firms readily respond to changes in the competitive environment. It is quite clear that organizations, especially complex ones such as MNCs, tend rather to exhibit inflexibility. The inertia of competitors might even be an important reason for a firm's competitive success. Unfortunately, the "box" representing the firm loses its transparency when assumptions of equilibrium, rationality, plasticity and one-sided exploitation are overemphasized. We are left with a rather blackened box, not too different from the ones in neoclassical, IO and new IO views.

5.4.5 More Dynamic Resource Based Views

Central to more dynamic RBVs is an emphasis on firm heterogeneity and how it arises. Resources are relatively heterogeneous, and competencies can gradually be accumulated (Reed and De Filippi, 1990). The focus is on dynamic aspects, and particularly on the mechanisms by which firms learn and adapt to changing environmental conditions. It is suggested that learning processes are a social and collective phenomenon and further that the knowledge output from these activities is embodied in static and dynamic organizational routines,⁹⁹ thus constituting organizational as opposed to individual skills. The firm's ability to use its resources better than its competitors use theirs is the primary source of durable rents. The source of these rents lies in the organizational and dynamic capabilities of the firm. The manager's role is one of "creation and protection," in which the practice of strategic management is an important source of competitive advantage (Schulze, 1992).

The "dynamic capabilities approach" of Teece, Pisano and Shuens (1997) is the most ambitious attempt so far within the dynamic category to focus specifically on strategy development. This view emphasizes organizational learning capabilities within the firm and various forces that constrain and focus learning processes. A range of such forces is identified, including path dependencies, technological opportunities,

⁹⁹See Nelson and Winter (1982) for a discussion of organizational routines.

complementary assets and transaction costs.¹⁰⁰ Compared to more static RBVs this approach not only emphasizes that the bundle of resources of the firm matters; it also stresses the importance of "...the mechanisms by which firms accumulate and dissipate new skills and capabilities, and the forces that limit the rate and direction of this process." (Teece et al. 1990, p.19). Organizational capabilities (Teece, Pisano and Shuen, 1997) refer to particular skills and routines (Nelson and Winter, 1982) and to organizational learning.

Capabilities may be rooted in the fundamental characteristics of the organization. Researchers have proposed that "organizational climate" (Hansen and Wernerfelt, 1989) or "organizational culture", "...a complex set of values, beliefs, assumptions, and symbols that define the way in which a firm conducts its business...", (Barney, 1986b, p. 657) may be determinants of firm performance and sources of sustained competitive advantage. Hamel and Prahalad (1993, p.76) suggest that "managerial frames," defined as "...the assumptions, premises, and accepted wisdom that bound or 'frame' a company's understanding of itself and its industry," might determine competitive outcomes. Powell (1992) appears to hold that organizational alignment, the ability to learn and adapt to changing environmental conditions (Burns and Stalker 1961, Lawrence and Lorsch 1967), may provide a distinctive organizational capability, and it might be maintained that more proactive organizational capabilities (Child, 1972; Miles and Snow, 1978; Weick, 1977) can provide unique competitive advantages as well. Hence, the organizational alignment or more proactive capabilities of an organization might be derived from its fundamental identity or capability.¹⁰¹ However, it is important to recognize that this organizational culture or identity can be a source of organizational inertia as well, especially at large, complex organizations like MNCs, once the "organizational culture" is established and the environment changes.

One current of research in the more dynamic resource-based category focuses on "a knowledge-based theory of the firm" (e.g. Grant, 1996; Kogut and Zander, 1992; 1996, Zander and Kogut, 1995). The firm is regarded as an institution for integrating

¹⁰⁰ For a further discussion of these forces and details on the "dynamic capabilities approach," see Teece, Pisano and Shuen (1997).

¹⁰¹ Several related concepts, besides "organizational culture", "organizational climate" and "managerial frames," have been used in the literature; "organizational paradigm" is another concept, used by Johnson (1988), but there is no common definition or theory (Smircich, 1983).

knowledge and a foundation for coordinated action among individuals. The link between asset specificity and firm boundaries does not primarily concern opportunistic behaviour and market failure, according to these views. The crucial issue is instead argued to be one of communication and the existence of a common organizational language which facilitates codification and transfer of knowledge in the firm. Shared language, knowledge and routines enhance efficient coordination. Firms are better than markets at sharing and transferring knowledge between individuals and groups (Kogut and Zander, 1992). Although this current of research does not specifically address strategy-creation, it focuses on the dynamics by which knowledge evolves over time in the firm. In this sense it is more focused on generation of knowledge and strategies than on the firm as a static repository of knowledge and resources.

The major advantage of the more dynamic RBVs is their capacity to include properties of strategy creation and change in strategic management; these are excluded in many other economics-based perspectives. Nevertheless, when process, growth and conditions for strategy creation are to be considered, the approach must also draw on other social-science disciplines, such as decision theory, cognitive theory and sociology. The knowledge-based approach specifically emphasizes the role of social interaction and identity in firms (e.g. Kogut and Zander, 1996). Some other scholars in the RBV field explicitly include behavioural approaches to strategy (e.g. Amit and Schoemaker, 1993; Rumelt, 1995). Amit and Schoemaker (1993) describe the process of resource generation at firms as one in which boundedly rational managers develop resources through imperfect and discretionary decisions which over time provide the firm with a set of organizational capabilities.

More behavioural aspects of strategic management can also assist in modeling processes of organizational transformation. For example, Rumelt (1995) builds a transformation-process model based on two kinds of organizational capabilities and the interplay of incentive intensity, coordinative capacity and five forces of behavioural friction¹⁰². The more dynamic currents of RBVs have not been sufficiently developed so far, and their conclusions are far from definitive. However, they do provide a possible basis for a marriage between strategy-content and strategy-process research, since it is

¹⁰² The frictional forces are: distorted perception, dulled motivation, failed creative response, political deadlocks and action disconnects (Rumelt, 1995).

recognized that strategy process has an important role to play in strategic management and that it can alter the content of strategy. Thus, there is a tentative foundation for a more complete theory of strategy and for a theory of strategy creation.

The more dynamic RBVs are more interesting when it comes to describing and explaining the development of the non-mechanical system, electro-hydraulic system and trailer surveillance systems strategy at Couplet. Several aspects of the Couplet case are recognized in these views. The successive learning by Couplet and various barriers to this learning seem to play an important role in the process. Couplet used a number of different learning mechanisms over the years in order to gain knowledge about the potential of non-mechanical system- and electro hydraulic systems, the product technologies and, finally, the manufacturing processes.

The "culture," or "identity," of Couplet and the Scanmeck Group were also important in this process, in some ways restricting, but in other ways enhancing, the learning. However, since these more dynamic RBVs are not fully developed, they cannot provide a comprehensive analysis. It seems as if these views do not sufficiently emphasize the importance of strategy process and evolution, particularly not the processes of creation and growth, but are still more concerned with internal efficiencies and economizing than with provisions for future growth.

Another aspect that does not appear to be adequately covered is the dynamic interaction between the firm and its environment, a significant factor in the case of Couplet. Even if learning from partners and through alliances is emphasized in the "dynamic capabilities" approach (Teece et al., 1997), the prevailing competencies and development paths are still at the center of focus. The more dynamic RBVs seem to overlook the role of the entrepreneur and the firm as a coordinator of firm *and* external resources and capabilities. The assumption that managers act rationally, which is present at least in Teece et al.'s (1997) interpretation, could also be questioned. The general overview and analysis of the Couplet case seems to uncover numerous indications of non-rationality that are difficult to assume away. In brief, more dynamic RBVs do not yet seem fully able to give adequate consideration to the creation, process, growth, entrepreneurial, and non-rational aspects of strategy. However, these views do constitute the most promising body of strategy-content theory for purposes of strategic management and the theory of strategy-creation.

It is clear that economics-oriented assumptions of equilibrium, rationality and flexibility play a more limited role in dynamic RBVs. Once again, however, it is important to note that there are important distinctions not only among different RBV writings, but within them as well. In sum, the dynamic RBVs, from different theoretical perspectives (e.g. Nelson & Winter 1982; Rumelt 1984; Schumpeter 1934), open the black box and explore the firm from within, focusing specifically *on the mechanisms and processes which generate new skills and capabilities such as knowledge and learning*. It is in this direction that strategic management needs to develop in order to examine complex foresight horizons and strategy creation.

There is a specific need for research on these strategic mechanisms and processes and their relationship to strategy content. It should be recognized that processes are highly relevant for strategy content. It is therefore appropriate at this juncture to examine the other principal area of research on strategic management, strategy-process research, which is discussed in the next chapter.

5.5 Strategy Creation and Strategy Content – A Summary

From the overview and evaluation of strategic management research in prior chapters, it would appear that some theories are better than others at describing and explaining strategic creation and change. Strategy-content theories could explain the competitive and resource positions of Couplet and other industry actors once the non-mechanical system-, electro-hydraulic system-, and trailer surveillance systems industry had been rather well-defined. IO-based strategy theories would show how Couplet and other companies colluded in various ways to limit competition in order to strengthen their positions. RBVs would indicate how Couplet used its resources and capabilities to build up a position. In particular strategy-content theories can specify which industry maneuvers and entry barriers and which company-specific resources and capabilities predominate today.

It seems to be more challenging for these theories to determine how the positions of the industry and the companies in it have arisen, changed and developed over time. Strategy-content theories appear to be weak at explaining how a specific barrier to entry or resource is identified or created. The emphasis on existing and

historic industry and resource positions can be explained by the fact that these theories have foundations in economics and focus on economic equilibria rather than on economic development and evolution. The basic assumptions of equilibria, rationality, organizational flexibility, etc. in economics leave no room for the role of process, bounded and variable rationality, inertia, etc. As a consequence, strategy content theories are concerned primarily with strategies of protection and exploitation of given industry and resource positions. In other words, they largely disregard the question of strategy process, or, in the normative interpretations, strategy process is implicitly assumed to have the character of strategy planning - first analysis and planning, then implementation.

It is important to note that the criticism of various assumptions taken from economics refers only to their use and relevance in regard to strategy making in complex foresight horizons and strategy creation. The various postulates of rationality work quite well "...if things have time to hammer logic into men" (Schumpeter, 1934, p.80). However, in strategic management, especially in a context of complex foresight horizons and strategy creation, they appear to be less relevant. One approach nevertheless proved to be more relevant and promising for research on strategy creation - that of the dynamic RBVs, with their greater focus on mechanisms of strategy development and exploration of new resources. In particular evolutionary economics appear to be a promising foundation. It is an area specifically emphasized by proponents of an economics based strategic management theory (Foss, 1996).

It seems as if the normative advice provided by strategy content theories is basically about copying, preserving or upgrading prevailing industry and resource positions. For Couplet's third strategic issue, which concerned non-mechanical coupling systems and later the electro-hydraulic system product, this option hardly existed. Rather, the situation was perceived as a strategic puzzle with ambiguous and complex industry and resource characteristics. Normative implications based on advice about strategy content did not much make sense in this context. Possibly they could have assisted Couplet in the trailer coupling mechanical systems product area and perhaps also in electro hydraulic systems after that industry and the resources available had finally been determined.

In this respect there appears to be a major shortcoming in strategy-content theories: they are essentially concerned with *ex post* views of strategy and focus on given industry and resource positions. Industrial organization analysis or an analysis based on Porter's (1980) five-forces model provides an identification of what the success factors have been in an industry. But while the competitive positions of yesterday can be pinpointed, entirely new and different positions are more difficult to identify.

The same criticism applies to the other pillar of strategy-content theories, resource-based views (e.g. Wernerfelt 1984, Barney 1986a). Once resources and capabilities have been established, it might be possible to determine their value. However, it is a different matter to analyze entirely new resources and capabilities and/or new combinations of them. The strategic tools recommended in normative terms by strategy content theories (i.e. five-force analysis, Porter, 1980; VRIO analysis, Barney, 1994) might help managers to understand what has happened and to reflect upon it and, perhaps, in upgrading existing competitive advantages. This analysis, however, is essentially an exercise in history and of limited use in developing future competitive advantages since it is based on present and past industry and resource positions.

Admittedly, these tools can provide a picture of existing competitive positions and what the important strategic issues have been. They indicate what is necessary in order to maintain and upgrade current competitive industry and resource positions. However, they are not sufficient for moving ahead and for discovering entirely new positions. Indeed, there is a risk that excessive focus on historic industry and resource positions might conceal new and innovative ones and lock the firm rigidly into a position that is too narrowly conceived.

In summary, it seems as if strategy content theories can tell management what is required to command a competitive position given the industry and existing resources, but not enough about what will be needed in order to surpass competitors in terms of new industry and resource positions.

Normative interpretations of strategy-content theory, including strategic planning and analysis, thus seem to provide *necessary*, but not *sufficient*, advice in strategic management. This characterization of strategy-content analysis explains why

both advocates and opponents of more strategic analysis and planning at Couplet were right. And wrong.

Its proponents in senior management were right in that many HQ managers and the Board were unaware of several critical strategic considerations in the industry and needed a better understanding of the current industry structure, its development and the strategic positions and resources of Couplet and its competitors. This knowledge was scarce at production-focused Couplet, but it was essential in order to keep up with industry and competitive developments. Thus, a certain degree of strategic thinking and analysis was necessary, as some members of senior management contended.

On the other hand, strategic analysis and planning alone would not be enough, particularly for resolving the third strategic challenge: the non-mechanical system and electro hydraulic systems issue. For this strategic problem, or rather strategic puzzle, formal models of analysis and planning had no relevance. From this point of view, those advising against more analysis and planning were correct, as discussed in Chapter Two.

Chapter 6

STRATEGY PROCESS THEORIES AND STRATEGY CREATION

6.1 Introduction

In this chapter the remarks regarding theories of strategy content and process are summarized. It is analyzed why strategy creation has been overlooked so far, even though it seems to be at the core of strategic management. Promising research avenues for strategic management theory and strategy creation in particular are outlined. In conclusion, a foundation for research and further study on strategy creation is provided.

In the prior chapter strategy-content theories were evaluated in relation to strategy creation and Couplet's entry and development of non-mechanical systems, electro-hydraulic systems, and trailer surveillance systems. Industrial organization perspectives, relating to the question of *where to go*, and RBVs, relating to the question of *how to get there*, were discussed and evaluated. It was concluded that IO and "classic" RBVs appeared to provide limited explanations about strategy involving complex foresight horizons and strategy creation, while more dynamic RBVs seemed more promising. In this chapter theories of strategy process will be evaluated. Several categorizations and typologies of strategy-making and strategy processes have been presented (Chaffee 1985; Johnson 1987; Mintzberg 1973, 1987, 1990b; Spångberg 1982; Smircich and Stubbart, 1985; Whittington, 1993). Without reiterating all classifications, there is a fundamental distinction between traditional views of strategy as a rational plan from the top of the organization, or *strategy-formulation* perspectives, and views that include other levels of the organization and contextual properties and that consider strategy as developing incrementally, or *strategy-formation* perspectives. This classification is a clearly a crude one. In Mintzberg

(1990b)¹⁰³ and Mintzberg et al. (1998), various strategy perspectives are assorted into *ten* different schools of thought; others have confined themselves to fewer categories. The purpose here is not to provide yet another classification, but to try to go beyond these descriptive categories and to examine the role of strategy creation in relation to them. First, *strategy-formulation* perspectives, focusing on *where to go*, will be discussed and assessed. Then *strategy-formation* perspectives, emphasizing *how to get there*, will be examined.

6.2 Strategy Formulation Perspectives - "Where To Go"

Strategic analysis and planning, or *strategy formulation*, perspectives (e.g. Mintzberg, 1990b; Design, Planning and Position schools) are characterized by the distinction between formulation and implementation. In these perspectives strategy is seen as an explicit plan, articulated in advance, which is deliberately developed from a set of alternatives through formal analysis and calculations¹⁰⁴ (cf. Ackoff, 1983; Andrews 1980a, 1980b, Ansoff 1965, Lorange, 1980; Lorange and Vancil, 1977; Porter 1980; Steiner, 1969).¹⁰⁵ Strategy-content theories (i.e. IO perspectives and "classic" RBVs) often implicitly assume this "planning and then implementation view" (e.g. Porter, 1980, Barney 1986a).

In the analysis of Couplet in the pilot study, it appeared as if strategic analysis and planning were inappropriate, especially for Couplet's third strategic issue (the potential non-mechanical system). Planning and analysis seemed to be of little normative use in that area since the outer context was altogether complex. Furthermore, in the specific examination of strategy creation in regard to the non-mechanical system (Chapter Four), strategy formulation did not seem to play any part

¹⁰³ Mintzbergs (1990b, p. 194-197) strategy schools of thought are the following, with strategy content and process dimensions in parentheses: Design (explicit/simple), Planning (explicit plan/analytical), Entrepreneurial (implicit/visionary), Cognitive (individual/mental), Learning (implicit collective/emergent), Political (ploys & positions/conflictive), Cultural (collective/ideological), Environmental (specific position/passive) and, finally, Configurational (all those mentioned earlier/integrative & episodic).

¹⁰⁴ This view of strategy has a long history, dating back to military strategists like Sun Tzu (1971/400-500 BC) and Clausewitz (1968/1832).

¹⁰⁵ The focus here is on strategy development and how strategies emerge. There are differences between the approaches. For instance, plans should be kept formal and detailed, according to Ansoff (1965), while

in a descriptive and explanatory analysis. Since strategy-formulation views do not seem to capture complexity, they are of little help when foresight horizons are ambiguous. Analysis and planning concerning industry forces and firm resources appear to lose much of their meaning when complex strategic issues such as strategy creation are considered.

A major problem with the strategy-formulation perspectives is the separation between formulation and implementation, which eliminates the possibility of adjusting strategy once it has been formulated; no learning is involved.¹⁰⁶ It is doubtful that the organization can know its strengths and weaknesses through thought alone; it appears as if it can only know its capabilities by testing them (cf. Mintzberg, 1990a). It does not seem as if more permissive strategy formulation models, in which strategic planning is seen more as a continuous process (e.g. Chakravarthy and Lorange, 1991), were applicable in the Couplet case, either. In general there is little discussion of process in strategy-formulation perspectives. Some treatment of *how* and *why* to create specific strategic outcomes would be useful (cf. Pettigrew, 1985a), even if the aim is not to present theories of strategy emergence.¹⁰⁷

The fact that strategy development and learning processes are largely excluded is the most serious shortcoming of strategy-formulation views. It clearly reduces not only the descriptive and explanatory usefulness of these views, but also their applicability for *normative* purposes. With their focus on formalization, exclusion of learning and lack of integration, there is a risk of locking companies into a specific perception of strategy perception and a position from which it is difficult to move once environmental circumstances change.¹⁰⁸ Not surprisingly, executives have testified that strategy rarely coincides with the rational and controlled structure

plans ought to be kept simple, according to Andrews (1980b). Porter (1980) emphasizes strategy content and making a choice among given generic strategies.

¹⁰⁶ In later versions of the Design school, however, the interaction between strategy formulation and implementation is more clearly recognized (e.g. Andrews, 1980a).

¹⁰⁷ Although social and political processes and interactions within the firm are not touched upon in strategy-formulation perspectives - the firm is regarded very much as a black box - they could be useful in certain areas and for particular purposes. Formal plans *are* used within companies, but in a more incremental fashion (Quinn 1980). In addition, for firms with relatively stable and analyzable environments, the strategy formulation models could provide a good approximation (cf. the "configurational" approach by Mintzberg, 1989, 1990b). In addition, the focus in these perspectives has been on how strategies *should* be formulated. Hence, the approach has primarily been prescriptive rather than descriptive or explanatory.

depicted in formulation and planning views.¹⁰⁹ The decomposition of strategy formulation processes into detailed and cumbersome procedures of analysis does not seem to have much to do with strategic management practice.

6.3 Strategy Formation Perspectives - "How To Get There"

Strategy-formation perspectives (e.g. Mintzbergs, 1990b; Cognitive, Learning; Political, Cultural, Environmental and Configurational schools) are in sharp contrast to the ones discussed above. In strategy-formation views strategy is depicted as an adaptive process in which piecemeal strategic decisions are taken. In this tradition, policy-making is seen as a "science of muddling through;" decisions are bargained in a more or less uncontrolled process (Lindblom, 1959).¹¹⁰

These perspectives strike at the core of traditional economics and strategy-planning models, showing that strategies might be uncontrollable and non-rational (Cyert and March, 1963). There is no one dominant actor, such as the CEO or top executive group. Rather, the strategy process is a collective one and, consequently, no one has total control over it. The whole process is emergent and political; strategy develops successively as a pattern of the past rather than as a plan for the future (Mintzberg, 1973). It follows from these characteristics that not only the maximization objective, but also another assumption of rationality, is questioned: namely that firms operate with perfect knowledge. Information is not simply given to the firm by some divine power, but has to be obtained through sequential scanning and search. Corporate management faces bounded rationality (Simon, 1955) and is not likely to be fully informed about all the details at the operating and implementing level. In addition, this approach recognizes that environmental conditions change

¹⁰⁸ In other words, even if this approach to strategy were successively implemented, it could still be criticized.

¹⁰⁹ Quinn (1980, pp.169 and 171) points out several anomalies in formal planning, and Mintzberg (1994) has completely settled the accounts with it in his book "The Rise and Fall of Strategic Planning".

¹¹⁰ Research in governmental policy-making, of which Lindblom's work is part, seem to have distinguished alternative policy-making descriptions and explanations before strategy research. Another important study of public policy-making and strategy formation in terms of political power bargaining is Allison's (1971) work "Essence of Decision: Explaining The Cuban Missile Crisis" displaying two alternative strategy and policy-making models to the traditional "Rational Policy" one: the "Organizational Process Model" and "Bureaucratic Politics model".

continuously and that consequently strategies must be reformulated during the course of implementation. The assumptions of bounded rationality and changing environmental conditions evidently undermine the dichotomy between formulation and implementation in the strategy-formulation perspectives.

The single in-depth study of the Couplet case is quite consistent with the general view of strategy formation presented above. The strategy process was an incremental one of successive learning over time in regard to the potential non-mechanical system. This observation is not particularly remarkable; similar ones have been made in a number of studies on strategy process. While the strategy formation perspectives have provided convincing descriptions of strategy-making, often they include little analysis of the more specific mechanisms involved. It is recognized that organizational learning is involved, but its details is not uncovered. The views also appear to draw little connection to strategy as such. There is often no specified relationship to strategic purpose and strategy content.

Organizational inertia, which is a dominating theme in many strategy-formation views, was clearly present in the case of Couplet. The company was passive and did not react to developments in the area of non-mechanical coupling systems. However, in contrast to its initial passivity, Couplet seemed quite active in learning about and developing a non-mechanical system and electro-hydraulic system once the company had finally reacted. Many strategy-formation perspectives and especially organizational change theories seem to disregard this kind of active and even proactive managerial and firm behavior toward the environment.

In brief, strategy-formation perspectives are more convincing in their description of strategy development as compared to strategy-content and strategy-formulation views. However, some of them have a tendency to focus excessively on restricting environmental forces and neglect management action in response to those forces. Roughly speaking, there appear to be two lines of thinking in regard to the power of external forces over organizational and management action. One is more static and emphasizes exogenous forces to a higher degree. It is rooted in organizational theory and focuses more on organizational change in general than strategic change in particular. The other is more dynamic; it stresses the purposive character of strategy-formation perspectives and focuses more specifically on strategic change.

A basic difference between them, as between strategy formation and formulation, is that the former is more deterministic and the latter more voluntaristic, but there are several other differences as well.¹¹¹ One important difference is that the former to a greater extent disregards strategy content and how changes in strategy come about and occur. The focus in these organizational change views, based in organizational theory, is on external forces, and the assumed passivity of firms and managers is due to the modest interest taken by these views in organizational, managerial and strategic decision-making.

As noted in the introductory chapter, Child's (1972) observation that organizations make decisions is not particularly revolutionary in strategic management, but it received considerable attention from organizational theorists. Nevertheless, since organizational change theories provide models of organizational and managerial processes and are often used to explain strategy-making and as a foundation for explanatory purposes in strategic management, they need to be considered in an attempt to evaluate strategic management theory. Too often models of organizational and managerial behaviour are not discussed in relation to each other, as recently noted in the introduction to chapter five. The first line of thinking, including organizational change theories, is briefly reviewed below before the other one, constituted by the purposive strategy-formation perspectives, is considered.

6.3.1 Organizational Change Theories and Strategic Management.

Many interpretations of organizational change and strategy formation based on organizational theory focus on the limited possibilities of organizations and managers to influence strategic outcomes, these limitations being due to social, political, cognitive and contextual factors. This focus is well illustrated in various branches of organization theory. Contingency theorists¹¹² refer to the importance of external forces, arguing that

¹¹¹ The tension between voluntarism and determinism is common in social science, but it seems to be difficult to balance the two in one theory. Theories have a tendency to exaggerate one or the other (Sellstedt, 1992, p.8 & 13). See Sellstedt (1992) for a discussion of voluntarism and determinism in relation to social sciences and philosophy and business administration and economics.

¹¹²Burns and Stalker (1961) named and defined the concepts of "mechanistic" and "organic" forms of organization and management. The argument was that an organic and flexible organization seemed to be best suited to cope with a changing and uncertain environment, while in a stable environment a

there is no one best way to organize, and that the choice should depend instead on the environment in which the organization acts. Uncertain and unstable environments require different approaches than static and stable ones.

Thompson (1967) emphasizes this significance of the environment for the structure of organizations and stresses that organizations shield their technical core from environmental disorder. Similarly, Galbraith (1974)¹¹³ presents a range of techniques for coping with the environment by reducing the amount of information to be processed and by increasing the capacity to handle more information (e.g. rules and programs, hierarchy, creation of slack resources, creation of lateral relations).

There are some dilemmas in emphasizing environmental determination and circumstantial differences as a source of organizational characteristics to a high degree.¹¹⁴ The one-sided focus on external forces conceals the dynamic relationship between the organization and its environment. In particular, it turns attention away from the analysis of organizational and managerial strategic courses of action. Contingency models, including and building on Burns and Stalker (1961), Lawrence and Lorsch (1967) and Thompson (1967), disregard the more active role which managers and organizations can play in manipulating and changing the environment, rather than passively adapting to it or trying to provide the organization with a buffer against it. This feature is particularly complicating for strategic management theory.

Another challenge to the contingency-fit argument is posed by complex organizations and strategic situations. With regard to the contingency focus on situational differences, the aggregate result when a large number of environmental variables are held to determine a large set of organizational characteristics is a chaos of variables. Multinational corporations (MNCs) encounter a turbulent and multidimensional environment which presents a variety of political, economic, social and technological developments to be considered.¹¹⁵ The contingency paradigm leads to

mechanistic and inflexible firm seemed to suffice. Lawrence and Lorsch (1967) built on Burns and Stalkers' findings and dubbed the term "contingency theory".

¹¹³ Galbraith (1974, p.28) takes an information-processing approach to contingency theory: "...the greater the task uncertainty, the greater the amount of information that must be processed among decision makers during task execution in order to achieve a given level of performance."

¹¹⁴See Miles and Snow (1978, especially chapter three) for a critique of the contingency approach.

¹¹⁵ Hedlund (1980), in a discussion on strategic decision-making, observes the growing complexity and turbulence of the MNC's environment and argues, "it therefore makes sense to conceive of the strategic problem of the MNC as one of adaptation to a turbulent environment" (Hedlund 1980, p.31).

several contradictory contingencies in the case of the MNC, as Hedlund and Rolander (1990, p.19) concluded: "On the one hand, you need to co-ordinate over product lines, on the other over geographical territories..."¹¹⁶ Taken *normatively*, contingency fit risks locking the company into a certain structure/strategy stance, limiting needed flexibility when environmental factors change.

When more political, social and cognitive processes are brought in, managers have even less control. The organization becomes an "organized anarchy," and the theories become even more deterministic. One such approach is the model presented by Cohen et al. (1972), in which problems, solutions, participants and choices arbitrarily flow in a "garbage can" and connect to each other. Since the notion of bounded rationality was established (Simon, 1957; March and Simon, 1958), a whole range of managerial biases and distortions in decision-making have been verified. When cognitive limits are made explicit, managers turn out to have only modest influence (Hogarth and Makridakis, 1981; Schwenk, 1984, Tversky and Kahneman, 1974).¹¹⁷

Virtually all stages of strategic planning and decision-making involve various biases (Hogarth and Makridakis, 1981; Schwenk, 1984). This statement clearly challenges strategy-formulation and economics-influenced views of strategy. At the same time, an exaggerated focus on distortions is easily reduced to a study of strategic decision-making pathology; while, in fact, firms and managers sometimes show a remarkable capacity to deal with complex situations. A criticism similar to that presented earlier can be proposed here: there is very little room for managerial or strategic choice in these views.

Nevertheless, some cognitive and decision-making theories are less deterministic, since they recognize that organizational environments are invented by

¹¹⁶ Hedlund and Rolander (1990) also contend that the environment is regarded as something given to which managers must passively adapt and that the contingency paradigm can not handle important aspects of the modern MNC such as the informal structure and the search for information. Information technology and systems might even diminish the importance of structural forms (cf. Hagström, 1991, 1992).

¹¹⁷ Scott (1992, p.298) associate the "organized anarchy" and "garbage can" views with the cognitive world sketched by Weick (1969): "...individual decision makers have cognitive and attention limits; external conditions constrain alternatives and affect outcomes but often go unnoticed; and choices by individuals in decision-making positions may not eventuate in organizational action. Under such conditions, all choices are somewhat ambiguous".

the organizations themselves to a high degree.¹¹⁸ According to these social-construction views, (Berger and Luckman, 1966) environments are acts of managerial invention rather than discovery (Weick, 1979). Managers possess considerable freedom to form and create the environment. This interpretive standpoint is interesting and promising. It has specifically been highlighted in strategic-management research (Chaffee, 1985; Smirich and Stubbart, 1985) and constitute a growing cognitive perspective in the field (e.g. Calori et al., 1994; Hodgkinson, 1997; Hodgkinson and Johnson, 1994; Stein, 1993, Porac et al., 1989, Porac and Thomas, 1990). A challenge in this line of thought is to consider how different cognitive structures develop. The cognitive perspective is probably one "missing link" in strategic management research (Stubbart, 1989), but it seems as if it also needs to relate more to the relationships between cognitive processes, structures and content.

Other organizational theorists underscore that the environment selects organizations, in contrast to the view that the organization adapts to the environment (e.g. Hannan and Freeman, 1977). The population-ecology argument clearly challenges strategic management altogether. Organizations are engaged in a struggle for survival of the fittest; those that are best suited and successfully compete for the scarce resources available are selected, while others subsequently die.¹¹⁹ An important contribution by this current of thought is its useful reminder to focus on whole populations of firms and not merely successful ones, which tend to attract the most attention in strategic management research. However, from a strategic-management point of view, the perspective is not only deterministic, but of little relevance, since the internal development of organizations and their resources and management's freedom of action are not considered in this process. Organizations live and die,¹²⁰ but from a strategic-management perspective managerial and organizational choices and actions play a role in deciding which ones will survive. If the outcome is only up to the environment to decide by selecting certain organizations, then strategy and management really do not

¹¹⁸ Starbuck (1983, p. 1078) observed: "The organization selects the environment it will inhabit, and then it subjectively defines the environment it has selected".

¹¹⁹ The dimensions of the environment in this view depend on the uncertainty, the compatibility of the different resource states (whether changes between environmental states are large or small) and the "grain" of the environment (frequency of change in environmental states over time, Brittain and Freeman, 1980).

¹²⁰ Many studies within this perspective have focused on the demography of organizations (e.g. Carroll and Delacroix, 1982).

matter.¹²¹ Again, however, it is important to stress that these natural and ecological models, like others in organizational theory, are more concerned with environmental and organizational relationships and organizational change more generally, than with organizational actions and strategic change. In the case of population ecology, survival rates of various organizational forms over the long run are of interest; how they were formed in the first place is not. In the very long run, however, organizations - or at least their managers - are of course all dead.

Another avenue in organizational theory that seems one-sided in its exaggeration of organizational inertness is institutional theory. Institutional theory attributes a passive role to the organization in an isomorphic development caused by institutional pressures. The new institutional theory¹²² seeks to complement traditional views of the environment as technical, consisting of technical flows and exchanges, by adding an institutional environment, encompassing institutional rules and belief systems (Meyer and Rowan 1977, Scott and Meyer 1983). The argument is that organizations also adapt to institutional environments, defined as shared belief systems which are considered as legitimate and appropriate, besides adapting to technical environments.¹²³ In this way organizations secure resources, receive legitimacy and consequently are more likely to survive. Organizations and managers are treated as passive by this theory as well in view of the strong institutional forces originating in the environment and outside their control. Hence, it does not seem to provide a particular good foundation for a theory on strategic management and strategy-creation. As with contingency theory, diversified

¹²¹A more interesting approach from a strategic management perspective is "organizational ecology," which is based on the view that the process of evolution can only be understood at the level of total ecology. Hence, organisms (organizations) do not evolve as a result of changes in the environment selecting the organisms that are to survive. Instead "evolution is always evolution of a pattern of relations embracing organisms *and* their environments. It is the *pattern*, not just the separate units comprising this pattern, that evolves. Or as Kenneth Boulding has put it, evolution involves the 'survival of the fitting', not just the survival of the fittest" (Morgan, 1986, p.67). This view is far more voluntaristic as it recognizes that organisms (organizations) and environments are engaged in a pattern of co-creation - the environment of the organism contains other organisms. Thus, it is clear that organizations can play an active role in forming their future.

¹²²For a discussion of the distinction between new and old institutional theory, see the introduction in "The New Institutionalism In Organizational Analysis" by Di Maggio and Powell (1991).

¹²³ According to this view, environments are composed of both technical and institutional characteristics to a varying degree, and the concepts are treated as continuums rather than dichotomies (Scott, 1990). It is important to recognize that general manufacturing companies are dominated by their technical

organizations, such as MNCs, are neglected in institutional theory. The question is, of course, what the relevant institutional environment for the MNC really is (Westney, 1993).¹²⁴

6.3.2 Couplet and Strategy Formation Perspectives

The case of Couplet and the non-mechanical system can be described and analyzed on the basis of the different organizational theories briefly discussed above. Buffering and informational processing of various kinds, cognitive distortions and institutional pressures might be identified, and it can be analyzed how Couplet was finally selected as a survivor by external forces. These relationships between the company and its environmental constraints are important. However, the determination of certain relationships between the environment and the organization and the identification of barriers to change are not the only interesting aspects of the situation. The generation of strategic and firm change also needs to be considered in an analysis of organizational and strategic change. Couplet managed, after all, to develop a non-mechanical system and became a world leader in trailer surveillance systems despite external complexity and pressure. It seemed as if at least part of the company was able to handle some of the complexity and managed to influence the environment.

Another, related, consideration is the purpose and content of strategic change and how it develops. For Couplet and strategic management theory, the strategy-creation process as such and its specific components, how strategic change actually occurs, are more interesting than predicting what individual environmental factors influence change. Using organizational theories to explain strategy making or as a basis for strategic-management explanations seems less productive from this perspective. The theories might be useful in analyzing barriers to strategy creation and change, but they appear to be of limited applicability when it comes to explaining origins and drivers of strategy creation and change.

The fact that an environmental straitjacket appears to be imposed by the more static strategy-formation views, including the organizational theories discussed above,

environment, while banks and pharmaceutical companies face a stronger institutional environment (See Scott, 1992, p.133).

is a result of their focus. First, the focus has been on organizational behaviour in relation to the environment more generally, rather than on individual organizational management behaviour in diversified corporations.¹²⁵ Second, organization theorists have had the generation and refinement of organizational theory as a primary goal, not strategic management or management relevance. Above all, the focus has not been on complex and diversified organizations, such as MNCs (Ghoshal and Westney, 1993).¹²⁶ Finally, and related to the above, the levels of analysis have been more on the ecological, cognitive and structural level rather than the individual managerial and organizational one. In brief, the observation that some organizational theories neglect and simplify individual firm and management behaviour is a result of different objectives when it comes to analyzing organizations and managerial work and not necessarily a criticism of the theories as such.

To understand strategy it is necessary to move further and to comprehend internal organizational development and strategic actions. For the purpose of strategic management, the process of strategic change in response to the environment needs to be specified and studied. The organizational theories discussed above empirically predict change. For purposes of strategy, however, it is primarily interesting how this change actually comes about and what parts can be influenced and how. The point of departure must be the individual company, its internal conditions and employees that bring about strategic change, apart from the forces opposing it. Specifically, the connection between what produces change and the outcome, or strategy content, needs to be revealed. Essentially, the indeterminate relationship between the environment

¹²⁴ Westney (1993) thoroughly discusses the MNC challenge to the institutionalization paradigm.

¹²⁵ There seems to be a slightly exaggerated reliance on studies outside the corporate world and especially outside diversified, large and complex organizations, such as MNCs. Many studies are conducted in hospitals, colleges, schools, etc., but few organization theorists have investigated diversified MNCs (cf. Doz and Prahalad, 1993). At least some of the most extreme theories in terms of determinism have had their primary inspiration from other types of organizations. For example the "garbage can" theory (Cohen, March and Olsen, 1972) was originally based on observations of decision-making processes in colleges and universities (Scott 1992, p. 298).

¹²⁶ Ghoshal and Westney (1993, p. 11-12) note this omission in the introduction to the edited volume "Organization Theory and the Multinational Corporation": "Virtually without exception, however, organization theorists have ignored or underemphasized the case of diversified organizations whose various constituent units are located in different business or geographic contexts....Existing theory can deal with this situation in one of two ways. It can either consider the MNC as a single entity facing a common global environment, or it can treat it as a set of sub-units, each operating in a distinct environment that is independent of the environments of all other units. Neither view is satisfactory, for the first ignores the differences across national borders, whereas the second ignores similarities and interdependencies."

and the company (Child, 1972) has to be specified if strategic management theory is to move forward. The focus needs to be on "how" and "why" strategy creation and change take place, on what generates it and what impedes it. In brief, organizational-change theories and organizational theories more generally are not entirely appropriate as a foundation for a theory of strategy creation and strategic management, since they often one-sidedly emphasize organizational passivity and inertia.

6.3.3. More Dynamic Strategy Formation Perspectives

Strategy-formulation views portray managers as unrealistically powerful. On the other hand, the more static and exogenously focused strategy-formation perspectives, which were discussed above, seem to neglect diversified corporations and how change occurs. There are, however, scholars in the contingency tradition who emphasize strategic choice (e.g. Child, 1972). In comparison to traditional contingency theorists, they emphasize the significance of the process of choice, in which the crucial role is played by power rather than rational argument and efficiency considerations. Administrators are constrained by environmental conditions, but there is also considerable scope for strategic choice; some are more able to cope with disturbances in the environment than others and, thus, possess more power. In addition, this view emphasizes that organizations respond to the environment in multiple ways, but also stresses the similarities of organizational behaviour in this confrontation.¹²⁷

Miles and Snow (1978, p.263) take this viewpoint and characterize the "neocontingency" approach as "...one that (1) views managerial or strategic choice as the primary link between the organization and its environment; (2) focuses on management's ability to create, learn about, and manage the organization's environment; and (3) encompasses the multiple ways ... [in which] organizations respond to environmental conditions." This research has directed more attention to multiple causation among organizational attributes and environmental circumstances and has emphasized managerial choice as an important factor in the interplay between

¹²⁷ According to Miles and Snow (1978, p. 259), it is not very fruitful to argue that "every situation is the same" (as seems to be close to the case in the *strategy formulation* perspectives), but neither is the argument "every situation is different" (as in contingency and other organizational change based *strategy formation* views).

them. Likewise, the fundamental argument in resource-dependence theory (Aldrich and Pfeffer, 1976; Pfeffer, 1978; Pfeffer and Salancik, 1978) is that organizations are dependent on resources from the environment, and that their behaviour is thus externally influenced.¹²⁸ The organization will adapt more to those external units controlling critical resources and, if possible, try to manage them.

Although organizations are constrained by the environment in this view, they can act in order to adapt to or alter the environment. Organizations are capable of "...changing, as well as responding to, the environment. Administrators manage their environments as well as their organizations, and the former activity may be as important, or even more important, than the latter" (Aldrich and Pfeffer, 1976, p. 83). Thus, processes of choice and adaptation play a larger role, as in the neo-contingency view.

Strategy as a coalignment process which is neither perfectly rational and efficient nor uncontrolled (e.g. Miles and Snow 1978) seems more convincing from a strategic management point of view than the previously discussed models of the strategy-formulation perspectives and of those strategy-formation perspectives including organizational theory. The neo-contingency and resource-dependence theories, which emphasize strategic choice, are very close to more explicit strategic management views which stress purposive strategy formation (e.g. Mintzberg and Waters, 1985). These strategic management views emphasize that strategic decision processes, even if quite complex and dynamic, are not an uncontrollable chaos. Rather, management in the strategy process is flexible and responsive when facing an uncertain and turbulent environment.¹²⁹

Strategy is defined as "a pattern in a stream of decisions" (e.g. Mintzberg 1978, Mintzberg and McHugh, 1985, Mintzberg and Waters, 1985). Stymne (1974) provided one early example of this more dynamic view of strategy formation in a

¹²⁸ The resource-dependence theory (Pfeffer and Salancik, 1978) holds that more basic structural characteristics of the environment and relationships among social actors are independent variables when the degree of uncertainty in the environment is to be determined. Pfeffer and Salancik (1978) refer to (1) degree of concentration of resources, (2) interconnectedness of organizations and (3) munificence of resources as the three basic dimensions of environments. In addition, conflict and independence determine the relationship among social actors.

¹²⁹ The view depicts strategies as "deliberate" or "emergent", these designations constituting two end points on a continuum. It also distinguishes "intended" from "unrealized" and "realized" strategies; the latter is a result of the others in an evolving pattern.

behavioural theory of strategy formation. He argued that the strategy process involves not only logical processes but processes of choices between values which are impossible to order logically. Strategy and organizational development is inherent in values, beliefs and behaviour, which influence the relationship to the environment (Stymne 1974, 1970).¹³⁰ Some other early writings based on systems theory (Ashby, 1956) emphasize the role of intentional strategy formation as well; companies engage in purposeful efforts to dominate their environments (Rhenman, 1970). Quinn (1980, 1978) similarly emphasizes *logical* incrementalism,¹³¹ while also taking the bounded-rationalist perspective.¹³² Thus, even if evolving through a step-by-step evolutionary process, strategy is still purposive according to this view.¹³³ Other views, while still being in the strategic management tradition, stress that logical incrementalism appear too rationalistic and put more emphasis on interpretative cultural and political aspects (Johnson, 1987). Through the feedback between formulation and implementation in these strategy formation views, *learning* is brought into the strategy process (e.g. Mintzberg 1990a, Mintzberg 1978). If strategy is seen as an emergent process, it has to be adapted when the organization subsequently learns about changes in the environment (Mintzberg and Waters, 1985).¹³⁴

¹³⁰ Stymne (1974, p.24): "Strategic candidates (suggestions or action alternatives which, if accepted, will affect the strategy of the firm) are generated not only as a product of deliberate planning and of formal planning systems. To a larger extent, they are generated through problem-oriented search triggered by external or internal problems, through unsystematic search, through the political system of the organization, and by the environment...The development of strategic alternatives is not only a rational process in which experts generate and evaluate different alternatives against goals set by the leaders. To a large extent strategic candidates are given their form through discussions and negotiations between groups and persons who have different interests, values and power."

¹³¹ Quinn (1980, p.58): "The most effective strategies of major enterprises tend to emerge step by step...The process is both logical and incremental. Such logical incrementalism is not "muddling", as most people understand that word. Properly managed, it is a conscious, purposeful, proactive executive practice."

¹³² It is important to note that the centre of firms, corporate management and top executives remain the architects of strategy in Quinn's (1980) interpretation, as in strategy-formulation views.

¹³³ The focus in this context is the common theme in these different approaches to strategy formation. It is recognized that differences exist between approaches that are classified in the same category. For example, Quinn (1980) holds an "evolutionary" view of the development of strategy processes, in contrast to Mintzberg (e.g. 1978), who has a more "revolutionary" view. Quinn perceives the strategy process as incremental; one element at a time is changed, while for Mintzberg strategies change rapidly in a revolutionary fashion. Of course, this difference depends on which perspective one adopts when studying the history of strategic changes; organizations can learn in an incremental fashion while also changing rapidly.

¹³⁴ In a study of strategic redirection in MNCs, Doz and Prahalad (1987) confirm this view of strategy processes. Strategy redirection was observed to be managed as a sequence of changes over time, and the transformation was described as a learning process.

The "configurational" approach is an extension of these more purposive or dynamic strategy-formation perspectives. Consistencies are traced in strategy processes, and distinct decision processes during particular periods of time are revealed (Mintzberg and McHugh, 1985, Mintzberg, Raisinghani and Théoret, 1976). Strategy is divided into different configurations in these approaches; different organizations, in various environments and during different periods, can be assigned to distinct groupings (Mintzberg 1989, Miller and Friesen, 1984)¹³⁵.¹³⁶

Couplet's entry into, and development of, non-mechanical system and later trailer surveillance systems as described in Chapter Four is a good illustration of a purposive strategy-formation process. Couplet incrementally adapted and developed a strategy in a complex environment. It is clear that the more dynamic strategy formation perspectives have more explanatory power in terms of considering various contextual aspects or various modes of strategy-making (e.g. adaptive, political, cognitive, symbolic and planning modes, Johnson, 1987). But there are also some questions remaining. How did the strategy process become purposive? How did the strategic change come about? From where and from whom did strategy develop? Some of these questions are not entirely addressed and evaluated in several dynamic strategy-formation perspectives. While these provide convincing descriptions of strategy formation, strategy content is often left out. Many of the views involve a process of incremental revelation of a purpose and subsequent definition of a strategy. However, in the case of Couplet's potential non-mechanical systems, there was a purpose or a vision among the electro-hydraulic system supporters at the outset. It did not seem to be incrementally revealed, and the environment was not solely constraining. Couplet and its managers actively penetrated, interacted with and changed the environment. Inertia prevailed initially, but over time Couplet probed into the complex environment, learnt about it,

¹³⁵ Miles and Snow (1978) can also be categorized as configurationalists; they assigned organizations to different archetypes or typologies, "prospectors", "defenders", "analyzers" and "reactors", each of which has its own unique strategy pattern.

¹³⁶ The configurational approach (Mintzberg 1989, 1990b) to strategy can be described as an "eclectic model" of strategic management. In this approach, strategy is not viewed in the traditional way as explicit, conscious and formalized; nor is there a focus on one separate aspect of strategy, for example market forces, political power or cognitive processes. Rather, strategy is seen as a pattern in the stream of decisions and actions where all the other aspects are brought together. Whether the strategy process is determined by market forces, political power struggles or cognitive processes, it always fits a specific environment at a specific time. The strategy can be a plan, ploy, position, pattern or perspective, in which the parts may contradict, but also complement, each other (Mintzberg, 1987).

built up resources and capabilities and positioned itself in the emerging non-mechanical system, electro-hydraulic system, and trailer surveillance systems industry.

Certain currents of research in the more dynamic area of strategy formation are more specific about strategy content and the processes of change. Pettigrew (1985a, 1987a) has developed the emergent strategy-formation views further in analyzing the political factors and learning processes involved. It has been established that strategy is an outcome of negotiation processes in which managers reconcile different viewpoints through the use of power based on their knowledge, experience and cultural/cognitive framework (Pettigrew, 1985a; Johnson, 1987, 1992). However, again, it is difficult to discern exactly how these political, cultural and cognitive processes influence the content of strategy. The political-power approaches in organizational theory have tried to specify the relationships. Both strategic-contingency (Hickson et al., 1971) and resource-dependence theories (Pfeffer and Salancik, 1978) emphasize internal political processes as determinants of organizational action. Political power in the organization, determined by the organizational function most able to deal with environmental uncertainty, affects organizational actions. The diverse political, and in some cases cultural, approaches seem to be some of the most promising ones for strategic management theory, even if they have to be further specified and put into a strategy-content context.

Some institutional theorists also recognize processes encompassing strategic choice and try to specify more precisely the mechanisms involved (Oliver, 1991; 1997). It is acknowledged that organizations may engage in manipulative strategies in order to influence institutional forces.¹³⁷ Institutional forces influenced Couplet's strategy in the sense that the company responded to the growing concern for trailer control in society at large. In the area of trailer surveillance systems, Couplet also collaborated with other societal actors: insurance companies, universities and various governmental organizations.

¹³⁷ Hence, parts of new institutional theory (Oliver, 1991) are promising, since they recognize that organizations and managers can play a role: "...organizations may engage in manipulative strategies to shape the social or political definition of organizational effectiveness. In this way, an organization's responses to the institutional environment will not only influence organizational performance, they may also influence the criteria, measures or standards used by institutional constituents to evaluate performance." (Oliver, 1991, p. 174).

Another research tradition that can be classified in the more dynamic strategy-formation area is constituted by the network-based theories focusing on interrelationships in business networks (e.g. Forsgren et al., 1995; Håkansson and Johanson, 1987; Håkansson and Snehota, 1994; Hägg and Johanson, 1982). This literature concentrates particularly on industrial network relationships, but also includes more general views on strategy formation.

Some of the literature is devoted specifically to strategy formation in MNCs. The fact that company behaviour and strategies depend on external networks and the acquisition of external knowledge is recognized in these studies of internationalization processes (Johansson and Vahlne, 1977) and global competition (e.g. Johanson and Mattson, 1988). Impediments to the flow of information between the company and the market influence the rate of international growth and the strategic development of companies, according to the views.

Another interesting approach, which explicitly extends strategy-formation views beyond description and incorporates strategy content, is the analysis of internal corporate venturing presented by Burgelman (1983a, 1983b). Intraorganizational ecological mechanisms are proposed as a fourth level of the ecological system, in addition to organization, population and community (Burgelman, 1991). This perspective classifies incremental strategic decision-making processes as either "induced" or "autonomous." Induced strategic behavior refers to strategic initiatives within the scope of the company's current strategy; these serve as variation-reduction mechanisms. Autonomous behavior, on the other hand, develops outside the prevailing strategy and functions as a variation enhancer. This approach combines a selection-oriented view with an adaptive one in a way that is promising for strategic management theory in general and strategy-creation in particular.

6.3.4. Evaluating Strategy Formation Perspectives

More dynamic and purposive strategy-formation views seem to describe and partly explain strategy processes in a reasonable way. However, their character is mainly descriptive, and few attempts have been made to go further. The descriptions, often expressed in various configurations and typologies, are convincing, for instance

regarding circumstances and problems of strategy implementation. However, they leave little room for strategies as such; there seems to be no specified relationship to strategy outcome and content. It appears as if the studies pay little attention to what strategy actually is about and, in particular, to how strategy develops - the specific mechanisms of creation and change. An exception is the literature that emphasizes political and cognitive processes, which have specified strategic change more precisely. In terms of normative aspects many views appear to be of limited relevance to management, apart from generally emphasizing implementation and incrementalism.

In some dynamic strategy formation perspectives, it is difficult to determine the actual logic or purpose of the strategies; in this regard, they share a problem with the exogenously oriented and more static strategy-formation views based on organizational theory. In both perspectives strategy is depicted as an emergent collective process in which formulation and implementation are essentially equivalent. Management does not deliberately engage in a process of searching for strategy or, if they do, it is unclear how. These strategy-formation perspectives might well be correct in their analysis; strategy formation might be haphazard and random rather than intentional.

However, in that case there is a serious challenge to the very concept of strategic management - both "strategic" and "management" seems to lose their meaning. In these approaches a specific strategy is validated by its use and the survival of the organization. Schendel (1992, p.3) highlights this *ex post* view of strategy and stresses that some *ex ante* prediction is needed in order for a strategy to be tested against *ex post* results: "Without such a theory, without an expectation (prediction), there is no role for management of strategy and no opportunity for the accumulation of knowledge."

In a summary of the strategy-formation views, four interlinked factors stand out as guides for further research in strategic management and on strategy creation. First, while it seems convincing to regard strategy as an incremental outcome of political, social and cognitive processes, this viewpoint would not appear to provide a complete understanding of how strategy develops and strategic change evolves. It thus poses a challenge, since prediction diminishes, and with it the role of management, the more the constraining processes are emphasized.

Second, even if strategy is regarded as evolving incrementally in the interplay among actors within the firm as well as with outside actors, it seems reasonable to interpret strategy as also evolving with a *purpose*, as argued by Mintzberg and Waters (1985), Quinn (1980, 1978) and Miles and Snow (1978) and others. The question is how this purpose comes about. It seems as if the logic or purpose and connection to content in the strategy-formation process needs to be specified. It does not seem adequate to establish that there is a logic to the actions of top management; there is also a need to discuss how that logic develops and how it is created.

Third, it seems reasonable to presume that strategy creation is a process involving multiple levels of the firm, not only top management (Burgelman, 1983a, 1983b). The challenge, however, is to go beyond merely describing this process and to suggest some explanations as to what strategy process means for strategy outcome and content. For the field of strategic management, which many consider as inherently normative, or "avowedly normative" (Teece et al, 1997, p.528), it does not seem sufficient to note that "...strategy is a theory about the reasons for past and current success of the firm" (Weick, 1987)¹³⁸. Political-power, cultural and cognitive approaches may provide some indication.

Fourth, it follows from the above that if strategy is considered to be a purposive incremental process involving explicit intentions as well as incremental and intuitive adjustments and multiple levels of the firm, it is necessary to explain how strategy is created and strategic change occurs. In other words, *a bridge is needed between research on strategy process and research on strategy content*. The separation between the two theoretical areas unnecessarily weakens strategy research. The distinction between strategy-content and strategy-process research has been useful, but it is essentially artificial. It is time to abandon the classification into the respective domains of content and process and instead to regard them as inseparable. This need has also been recognized in the debate on strategic management research (Melin, 1992; Pettigrew 1992; Schendel 1992a, 1992b).¹³⁹ The need to bridge content of change (what changes) and process of change (how change occurs) has also been observed in organizational

¹³⁸ Weick (1987, p. 221-222) portrays Burgelman's view of strategy.

¹³⁹ Pettigrew (1990) has been a forerunner in emphasizing the connection between content and process. His model for strategy process research incorporates the *what* of change in strategy *content*, the *why* in inner and outer strategy *context* and the *how* in strategy *process* analysis.

change (Barnett and Carroll, 1995) and in organization theory more generally (Pfeffer, 1997). The strategy-content – strategy-process relationship will be further examined in the multiple case study. It is also discussed in the next main section, in which the theoretical foundations for the rest of the study are outlined.

6.3.5 Strategy Creation and Strategy Process – A Summary

Like the strategy-content theories, the strategy-process theories have a tendency to be static. In strategy-formulation perspectives, strategies are analyzed, strategic alternatives are sketched and, finally, an alternative is selected and implemented. Strategy is a formalized exercise without much feedback from implementation and the environment. Little strategic learning and dynamics are involved. It is clear that this interpretation of strategic management does not apply in the case of Couplet. The problems with its descriptive as well as normative solutions have repeatedly been verified.

Strategy-formation theories describe and explain a range of environmental constraints faced by Couplet in the non-mechanical system, electro-hydraulic system and trailer surveillance systems industry. The views based on organizational theory would show how Couplet adapted its organizational structure to fit the environment, isomorphically changed under the influence of to institutional pressures and was selected by the environment. A whole range of more or less deterministic environmental forces and barriers to strategic change could be depicted. Similarly, more purposive strategy-formation perspectives could describe the incremental and emergent character of the strategy-development process. Various internal actors, as well as partners, regulating authorities, etc. and a range of strategic alternatives and processes could be presented in detail.

It is more of a challenge to determine how strategy creation and strategic change actually occurred and how the purpose, logic and content of the new strategy developed. Some strategy-formation theories seem less able to explain the relationships to strategy content and to identify the mechanisms that determine strategic change and creation. In particular, the views focused on organizational

change are not concerned with large, complex, diversified firms, such as MNCs, for which the organizational environment, too, is highly complex. The focus of these views on simpler organizational structures and on external constraining forces, and the downplay of strategy content, can generally be explained by their foundation in organizational theory.

In organizational theory the description of organizational development in light of external forces is of primary importance, while the ability of organizations to make strategic decisions is secondary. In the case of Couplet the theories can assist in identifying various forms of external and cognitive constraints. However, they are of limited use when it comes to disclosing endogenous mechanisms and how strategy is created. Taken together, strategy-formation theories primarily concern descriptions and explanations of external forces. Many are based on an *ex post* perspective. There is thus a serious challenge to strategic management. If there is no hypothesis of a strategy outcome, the "management" in strategic management diminishes. Thus, normative advice, apart from a general emphasis on incrementalism, implementation and intuitive factors, is essentially absent. However, purposive strategy-formation views are promising as a foundation for research on strategy creation, especially those focusing on political and cognitive processes and explanations. An overview of these and other promising research avenues will be provided in the final section of the chapter.

6.4 Strategy Creation - a Blind Spot in Strategic Management Research

It was noted above that strategic management theories appear to have had limited success in addressing the question of complex foresight horizons and strategy creation and to have disregarded investigating the role of more peripheral organizational sections in strategy-making. There are several structural reasons for this (besides difficulties in terms of modeling), which are outlined below.

First, the economics-based tradition has dominated strategic management research during the last two decades. It has clearly benefited the field, but at the same time it essentially assumes away many aspects of strategy creation and complexity,

such as processes, learning, uncertainty, and instability. (cp. Hirsch et al. 1990). Many criticize this tendency, which is typical of a normal science tradition based on economics (e.g. Bettis, 1991; Daft and Buenger, 1990; Hirsch et al., 1990).¹⁴⁰ According to these critics, the research relies overly on economics, implying that the organization is simply considered as a bundle of assets, that only the formulation stage of strategy is covered and that change is represented by deterministic environmental selection (Bettis, 1991; Hirsch et al., 1990).

It is clear that behaviourally oriented strategic management research needs to build on what economics-based research has achieved. Other disciplines are more appropriate when the more applied aspects of strategic management, such as strategy creation, are studied. As Rumelt et al. (1991, p.22) remark: "But the applied nature of strategic management and its extensive scope will require intersection with theory from other social disciplines as well." Hence, *strategy creation and change need to be investigated from a variety of angles without becoming trapped in a normal science paradigm.*

Second, and related to the above, the different rent concepts¹⁴¹ used in the economics-based strategy research of the industrial-organization and resource-based views are essentially static. Monopoly rents, or rather profits, arise as a result of a deliberate restriction of output through various market-power mechanisms (Peteraf, 1993) such as raising entry and mobility barriers.¹⁴² Ricardian rents in RBVs are returns on an asset of fixed supply, given that the rent determined by the factor is "...insufficient to attract new resources into use." (Rumelt, 1987, p. 142). These rent concepts are based, in the first case, on collusive behaviour within given industries and, in the second, on the productivity of given resources or their different applications. The focus is on the scarcity value of given assets resulting from

¹⁴⁰ The criticism particularly concerns static correlational studies in strategy-content research, focusing on specific strategic decisions and their repercussions. It primarily relates to the strategy-structure-performance (SSP) tradition. See Hrebiniak, Joyce and Snow (1989) for an overview of the development within the SSP framework and Hedlund and Rolander (1990) for a critical examination.

¹⁴¹ The concept of economic rent, "...the excess return to a factor over its opportunity cost." (Peteraf, 1994), has been given various meanings and it is a quite ambiguous term. For a clarification see Peteraf (1994), who sorts out the confusion surrounding the concept(s).

¹⁴² Usually rent is distinguished from monopoly profits in economics. Profits accrue from a price exceeding marginal cost because of restricted entry, while rents are returns resulting from inframarginal cost even though $p=MC$ (Schoemaker, 1990, p. 1180).

protection from market entry or being in fixed supply. Hence, the point of departure is given industry and resource positions rather than the discovery and creation of new positions or new combinations of them. Entrepreneurial or Schumpeterian rents, in contrast, are returns resulting from discovery and innovation of new combinations of resources in uncertainty.¹⁴³ It is the excess of a venture's returns over the *ex ante* cost of the combined resources (Rumelt, 1987).

Uncertainty is of importance for this rent concept, since the *ex post* value of the particular combination is uncertain *ex ante*. Essentially, then, entrepreneurial or Schumpeterian rents are the difference between the *ex post* and the *ex ante* values of the resource combination (Knight, 1921; Rumelt 1987). It might be argued that the difference in comparison with other forms of rents is subtle; once discovered and established, rents may be determined in terms of monopoly or Ricardian rents. However, in the search for a suitable theory of strategy creation in complex contexts, the difference is important. The entrepreneurial-rent concept takes the scarcity value of innovation and the combination of new knowledge on uncertainty into consideration, rather than the scarcity value resulting from protection from market entry or resources in fixed supply. Monopoly and Ricardian rent concepts in principle become *ex post* definitions of returns in a strategic management context. They are possible to identify once they are established, but their discovery is downplayed. *Entrepreneurial or Schumpeterian rents seem more appropriate for strategic management theory, especially in cases of complex foresight horizons, strategy creation and change.*

Third, and related to the first point, the methodologies used in strategy content and economics-based research are partly to blame for the neglect of more complex foresight horizons and strategy creation. Researchers who have reviewed the field argue that there has been an overemphasis on static correlational studies based on uniform positivist assumptions and theories, especially within the industrial-organization tradition (Bettis, 1991, Daft and Buenger, 1990, Hirsch et al., 1990). The focus on the logical positivism of a normal scientific tradition has resulted in large-sample multivariate statistical studies with little or no capacity to capture the

¹⁴³ Note that rent here refers to quasi-rents (Klein et al., 1978; Peteraf, 1994) or t-rents (temporary rents, Schoemaker, 1990), rents resulting from factors whose supply is fixed in the short run. Hence,

development and creation of strategies.¹⁴⁴ Broader perspectives and methodologies are suggested as alternatives: qualitative studies, longitudinal studies, exploratory studies, case studies, and speculative studies. At this preparadigmatic stage of strategic management theory, these alternative methodologies seem reasonable for examining strategy problems and strategy creation, particularly when complex foresight horizons are involved. Despite the inherent risk of fragmentation, it seems as if behavioural as well as economics-oriented researchers on strategy are furthering a pluralistic development of both theory and methodology (Bettis, 1991; Bowman, 1990; Daft and Buenger, 1990; Rumelt et al., 1991; Teece, 1990).¹⁴⁵

Fourth, the separation of the four areas of strategic management research outlined in the introductory chapter has contributed to the lack of understanding about strategy creation. Strategy-formation theories, in particular organizational theory based perspectives, seem to lack sufficient association to what strategy change and creation are about - strategy content. They have provided a good picture of how strategies develop over time, but the connection to strategy outcome or content need to be developed. The focus has mostly been on processes and challenges in strategy implementation. For strategy-content theories the problem is inverted; they disregard the process - how new industry and resource positions develop. The achievements within strategy-content research during the last two decades have persuasively depicted various industry and resource positions, but not the processes of discovering and creating them. If strategic management theory is to be developed further and strategy change and creation are to be explained, the gap between strategy-content and strategy-process research needs to be bridged. The Couplet case shows that strategy content and process seem to go hand in hand rather than being entirely separate in strategy creation and more complex strategy problems. The division between the fundamental strategic questions of *where to go* and *how to get there* has isolated industry and resource factors from each other in strategy content, and strategic

this concept differs from pure economic rent (Peteraf, 1994) which persist in long-term equilibria.

¹⁴⁴ In an early study on the publications in the *Strategic Management Journal*, 90% of the articles turned out to be essentially cross-sectional and 10% longitudinal (Zajac and Bowman, 1985, cited in Bowman, 1990). Another overview of publications within the SSP paradigm in major journals showed that all studies were cross-sectional bivariate or multivariate, primarily based on mail surveys or databases (e.g. PIMS, Compustat, Hrebiniak, Joyce and Snow, 1989).

¹⁴⁵ Others, however, argue for a less pluralistic development and economics as a foundation in strategy research (Foss, 1996).

planning from strategy implementation and emergence in research on strategy process. In both respects, the separation complicates an analysis of strategy change and creation, which seems to require a more holistic view. The strategy-process question of *where to go* in terms of strategy formulation is clearly linked to the strategy-formation question of *how to get there*. Similarly, the strategy-content question of *where to go* in IO is intimately connected to the question of *how to get there* in RBVs. *All four individual areas of strategic management - strategic planning and formulation, strategy formation, industry factors and resource factors - are involved in strategy creation and change and need to be taken into consideration. In short, a more integrative effort is required.*

A fifth possible reason why strategic management theories have had difficulties in providing an understanding of complex foresight horizons and strategic creation might be their level of analysis. Economics-oriented theories focus on industry and resource levels rather than specific firms, individuals and interactions among firms and individuals. Ironically, the consequence is that there is no detailed analysis of the specific interaction and relationship involved in strategic management, the one between firm and environment. It seems especially critical that the assimilation and integration of external information and knowledge in the organization are left out. Inter- and intra-firm processes and learning are largely disregarded because of an overemphasis on industry and resource levels of analysis. In the strategy-process category many organizational change and strategy-formation views based on organizational theory have focused on structural and ecological levels of analysis, but disregarded firm, strategic decision, individual levels and interactions as in strategy-content perspectives. Strategic change, creation and growth as described in these theories consist mostly of passive organization structure and cognitive adaptations and environmental selection on the organizational level without any specific determination of the content of change. *Firm-specific action and learning and entrepreneurial initiatives versus exogenous forces have to be considered in strategy change and creation. Strategy processes and learning on the level of firms, groups of individuals and individuals need to be considered.*

Another, and sixth, issue which possibly could clarify why strategic creation is not investigated sufficiently in strategic management despite its central importance

might be the excessive focus on the upper echelons in corporations. Most schools of strategic management have targeted senior management because strategy is expected to emanate from there. Both strategy-content and strategy-process research have focused mostly on that part of the organization. One explanation may be that the former largely takes a planning view of strategy, while the latter studies how the plans and directions deliberately adopted by top management have to be changed depending on environmental circumstances. The influence of more peripheral firm units and actors is often left out. Even in cognitive studies it is often the cognitive structures of top executives that are in the centre. It seems as if strategic change and creation that grow out of other parts of organizations are neglected. The focus on the upper echelons might be deliberate; after all, it is they who are the target for strategic management's normative output. They are not likely to favor solutions that undermine their power in terms of strategic control. Thus, it might be difficult to promote normative advice which highlights completely different parts of the organization as strategy developers. *However, if strategic change and creation are to be studied, it is probably sound to involve other hierarchical levels as well and to study other ways of managing strategy, besides planning and managing subordinates. More peripheral parts of the organization might be at least as important as the upper echelons.*

Finally, more indeterminate forces may play an important role in strategy-making and strategy-creation. Trial and error, the perceptiveness, or perhaps the "gut feeling," of the new President and creativity in terms of finding new electro-hydraulic system solutions played a certain role in the Couplet case. The fact that experiments, intuition, "gut feelings" and creativity might be part of strategy-creation and strategic change has probably contributed to the shortage of research in the area. These kinds of imprecise forces simply make research difficult and results uncertain. Furthermore, if irrational processes and serendipity were to be viewed as playing an important role, normative strategy advice would be hard to come up with. Top managers are probably unwilling to listen to suggestions that they do not have control and that other and more indirect mechanisms are at work. *However, since more indeterminate forces of the kind mentioned may be involved in strategy making, they need to be investigated. If experimental, creative and more "irrational" processes have a role, they have to be taken seriously.*

6.5 Promising Research Avenues for Strategy Creation Research

The brief analysis of Couplet and its third strategic issue, the non-mechanical system, at the end of last chapter revealed three noticeable characteristics concerning strategy *context*, *content* and *process*. The *outer strategy context* was *complex* in virtually all dimensions, in terms of technology, market and legislation, rather than consisting of a defined industry and resource setting. Furthermore, there was no specific *strategy content* to begin with. The context presented a *strategic puzzle* for a long time, rather than a well defined strategic issue or decision. The *inner strategy context* involved two *sub-processes*, rather than one single, conclusive strategy process. The *strategy sub-processes* involved various types of learning dynamics. As discussed above, the attributes of strategy in the single in-depth study are to some extent challenging to some strategic management theories and perspectives, but there are also promising foundations to build on in the investigation of strategy involving complex foresight horizons and strategy creation.

The *outer strategy context* of Couplet's third strategic issue, the potential non-mechanical system product, was complex. Market, technology as well as legal factors were all highly ambiguous. The translation of economics into IO perspectives and RBVs presupposes in both cases a level of stability not present in this situation. It seems as if they cannot completely explain strategy creation in an uncertain and unstable environment. The situation in the case was rather one of Schumpeterian competition, where entirely new industries and resources are combined and created. The appropriate economics tradition to build on appears to be evolutionary economics (Schumpeter, 1934, 1942; Nelson and Winter, 1982), which focuses more on the creation of new industries and resources than on the development of existing ones. Other writings in the entrepreneurial tradition of economics (Hayek, 1945, Knight, 1921; Kirzner, 1973, Mises, 1949) are relevant as well in efforts to develop a more comprehensive strategic management theory, including strategy-creation aspects. This economics literature has largely been ignored in strategic management because translating it into terms meaningful for strategic management is extremely difficult. Furthermore, it is likely to provide less predictable conclusions and less specific

strategic implications compared to other influences from economics. Despite this, it needs to be considered, since entrepreneurial processes play a crucial role generally in strategic management and particularly in strategy creation and strategic change.

No particular *strategy content* was observed at the outset; rather, the situation could be termed a strategic puzzle. The puzzle was solved over time through a process of adaptation and learning at the company and among its managers. It was an ongoing process in which strategy content was created and formed by the company in interaction with various external actors. Company actors made sense of the puzzle, identified and interpreted it piece by piece, and subsequently generated strategy content. Strategy literature emphasizing this character of strategy needs to be taken into consideration in order to extend strategic management theory and explore strategy creation. Promising contributions in the area are various cognitive organizational theories on "sensemaking" and enactment (Pfeffer and Salancik, 1978; Weick, 1979, 1995). These theories focus not only on the limiting forces in relation to cognition, but on the enabling characteristics as well.

The *inner strategy context* included diverse groups and sets of processes. It was not a single strategy process, but rather two quite different strategy processes. In addition, there seemed to be a strategy process evolving between these two groups. There are related, although not directly applicable, strategy writings in relation to this in the configurational strategy tradition, emphasizing different processes of strategy configuration (Mintzberg, 1989, 1990b; Miller and Friesen, 1984). Burgelman's (1983a, 1983b, 1991) division of strategy processes into "induced" and "autonomous" relates more closely to the observations made. Indeed, one of the strategy processes was more autonomous than the other and had different process characteristics.

Regarding *strategy process*, it was characterized by diverse ways of probing the environment, or the diverse types of learning dynamics displayed in the two strategy processes. Through these, knowledge, capabilities and resources were gradually built up over time. For corporate and other managers at Scanmeck, some senior managers and the Couplet Board, the process had a certain character and for those supporting the electro-hydraulic system venture a quite different one. Diverse sensemaking and cognitive capabilities played a role in the different approaches towards the strategic puzzle. Hence, cognitive and sensemaking theories are of relevance (e.g. Weick, 1995).

As regards learning and building up resources and capabilities over time, more dynamic RBVs provide guidance, even if the perspective is still far from comprehensive (Amit and Schoemaker, 1993; Tecce et al., 1997). In addition, literature focusing on the dynamics by which knowledge emerges over time and on knowledge transfer and transformation are of relevance (e.g. Zander and Kogut, 1995, Kogut and Zander, 1996). Although diverse and emergent, the separate strategy processes in Couplet evolved with a purpose. This relates to strategy process research, which emphasizes that strategies are formed incrementally, but with a specific purpose (Mintzberg and Waters, 1985; Quinn 1980).

In summary the following, partly overlapping, areas seem to be promising as a foundation for theories of strategic management and strategy creation in particular: entrepreneurial and evolutionary economics, cognitive and "intraorganizational ecological" perspectives in organizational theory, purposive strategy-formation and configurational perspectives and, finally, more dynamic resource-based views. It might be argued that this is a quite diverse collection of theoretical currents. There is, however, a common denominator: "*organizational learning*". Regarding learning and knowledge in organizations, there is a tradition in organization theory beginning with Cyert and March's (1963) seminal work. Various concepts have been used: adaptation, change, assumption sharing, etc. and a range of different approaches to the subject are available, focusing on different parts of the learning process. The research still seems to be in its infancy, and there is not yet any common theory of organizational learning (cf. Huber, 1991; Fiol and Lyles, 1985; Miner and Mezias, 1996; Shrivastava, 1983). Organizational learning is subject to controversy, but it has attracted a great deal of attention in the perspectives discussed above and historically in strategy in general (e.g. Burgelman, 1983a, 1983b, Mintzberg, 1978; Normann, 1976). Recently organizational learning has specifically been suggested as fruitful in investigating and explaining strategy development and strategy renewal: "We identify renewal of the overall enterprise as the underlying phenomenon of interest and organizational learning as a principal means to this end" (Crossan et al., 1999).

It can be questioned whether organizations learn in the same ways as individuals. Simon (1991) rejects organizational learning, although he recognizes that what others in the organization know and the information which is present in the

environment are important for individual learning. Thus, learning is individual, but it involves a collective and social process. This is in accordance with the view that the distinctive feature of organization-level information is sharing (Daft and Weick, 1984). Hedlund and Nonaka (1991) also emphasize the importance of the process of knowledge transmission between the individual and the organization. *The more social interaction and transmission between individuals are emphasized as important for individual learning in organizations, the closer an explicit acceptance of organizational level learning* (cf. Levitt and March, 1988; Hedlund and Nonaka, 1991; Kogut and Zander, 1992; 1993; Crossan et al., 1999).¹⁴⁶

A principal argument in this respect is that organizations learn "...by encoding inferences from history into routines that guide behavior." (Levitt and March, 1988, p. 320). Hence, learning is organizational in the sense that it is built into these routines. In Levitt and March (1988), routines have a broad meaning, referring to rules, procedures, conventions, strategies, etc., but also beliefs, frameworks, codes, cultures, etc. This definition encompasses other concepts of organizational behaviour and learning, such as organizational routines (Nelson and Winter, 1982), organizational belief systems (Donaldsson and Lorsch, 1983) and other shared understandings such as ideologies, cognitive systems, mental maps, norms, etc. (Brunsson 1985, Daft and Weick 1984; Hedberg 1981).

Levitt and March's (1988) definition also corresponds to many others in that the routines are seen as independent of the individual actors. The members of the organization can come and go and leadership can change, but organizational memories still retain the routines (beliefs, cognitive systems) over time (cf. Hedberg 1981). In sum, it seems as if learning and other organizational capabilities are not reducible solely to the sum of the learning and capabilities of the individual members in an organization, in accordance with Winter (1982, p.76): "What requires emphasis is that...the learning experience is a shared experience of organization members...Thus, even if the contents

¹⁴⁶ Hedlund and Nonaka (1991) prefer to focus on "knowledge" rather than "learning" in order discuss supraindividual levels and to discuss the interaction between various levels of analysis rather than using individual learning as a parallel to organizational learning. They point to the fact that it is of vital importance to be more explicit regarding the different units of analysis and suggest a distinction between *individual, group, organization* and *intraorganizational domain*. Their focus is on how knowledge is transferred and transformed when exchanged between the different levels. Kogut and Zander (1992) have a similar discussion concerning the integration of individual and organizational knowledge and propose a corresponding use of different levels of analysis.

of the organizational memory are stored only in the form of memory traces in the memories of individual members, it is still an organizational knowledge in the sense that the fragment stored by each individual member is not fully meaningful or effective except in the context provided by the fragments stored by other members”.

The recognition of organizational learning implies the possibility of collective knowledge and collective knowledge structures or common organizational and managerial frames of interpretation. It suggests that groups and organizations might share frames (Bateson, 1982) in contrast to schemas (Anderson, 1980), which belongs to the individual: "The schema depends on what the individual sees and believes. The frame, on the other hand, depends on group dynamics – on the relationship of individuals to each other and to the group" (Mintzberg et al., 1998, p.165). The notion of common frames and cognitive maps is prevalent in social sciences, economics, organizational theory, and strategic management (Axelrod, 1976; Bateson, 1972; Cyert and March, 1963; Daft and Weick, 1984; Lyles and Schwenk, 1992; Johnson, 1987, 1992; Spender, 1989).

As with organizational learning, the related subject of collective cognitive structures is not uncontroversial. For example, it has been demonstrated that there are considerable differences in cognitive structures within and between organizations in the same industry (Hodgkinson and Johnson, 1994). It is clear that both organizational learning and collective cognitive structures are subject to controversy, and some scholars within the field have emphasized the individual as the relevant unit of explanation (e.g. Hayek, 1945, 1949; Simon, 1991).

The position taken here in relation to this fundamental question in social sciences is that organizational learning and organizational and group frames could be interpreted as something more global than the aggregate of individual learning and cognitions, based on the above-mentioned literature on organizational learning and collective cognitive structure. Hence, the point of departure is an openness to the possibility of learning at the organizational level and of cognitive structures. The study might assist in developing sharper definitions and, in particular, in determining the group dynamics that contribute to organizational-level learning and frames, even if this is not the primary target of the study. The literature on organizational learning and

collective cognitive structures provides the final element in the framework of theory to be used in the continuation of the study.

6.6 Summary and Conclusion

6.6.1 "How To Get Where To Go"

The economics tradition in strategic management research has contributed significantly to the field. However, when complex foresight horizons and strategy creation are investigated more closely, dynamic properties need to be considered. Schumpeterian economics seems more relevant than prior currents of economics-based strategy research, since creation and discovery and entrepreneurial rents emanate from uncertainty and complexity. In addition, economics-based views need to be complemented with other social sciences. This seems especially relevant for strategy change and strategy creation, since organizational and individual beliefs and values, perceptions and knowledge play an important role, as has been illustrated in the Couplet case.

Researchers in the economics-based tradition seem to share this view, as emphasized in Chapter One: "Where the coordination and accumulation of knowledge is key, and where patterns of belief and attitude are important, other disciplines will have more to say." (Rumelt et al., 1991, p.27). Strategic management needs to consider other social sciences, instead of too readily accepting a tradition of convergent normal science thinking, at least as regards strategic change and creation: "...much research in strategic management seems increasingly and *prematurely* caught in a 'normal science straitjacket.'" (Bettis 1991, p. 315). More dynamic resource-based views offers an opening for other disciplines and for a potential "merger" between economics and behaviorally oriented strategic management research, since it recognizes - some parts more than others - that the practice of strategic management matters. On the other hand, strategy-process views need to consider to a higher degree the content of strategy, what strategy is about, and the specific connection to strategy process. The separation between strategy content and process might have been helpful in developing the strategic management field, but it is essentially artificial.

The gap between the two research avenues of strategy content and process needs to be bridged in order to provide a model of strategy creation and growth. Furthermore, the fundamental strategy questions of *where to go* and *how to get there* also need to be treated in conjunction. In circumstances of uncertainty and complex foresight horizons, the industry positions of *where to go* are not clear, and it is not possible to determine the resource positions of *how to get there*. Likewise, the strategy formulation question of *where to go* and the strategy formation question of *how to get there* are ambiguous. In these situations the fundamental issues of strategy tend to be interrelated, and their division into strategy content and process breaks down. Therefore it seems wrong to treat them as separate.

The question to be answered in a situation of complex foresight horizons and strategy creation seems instead to be *how to get where to go*. This implies that the focus is not merely on *where to go* in terms of identifying market positions or formulation of plans and it is not solely on *how to get there* in terms of locating resource positions or the formation of strategies. Rather it is on *how to get the plan and/or formation process leading to where to go in terms of a certain market and/or resource position*. The focus is shifted towards the specific processes that develop the strategy. The question is how to find out where to go in terms of strategy creation. It is more oriented toward action, experiments, etc. rather than solely towards analysis or description. The rephrased strategic question indicates that process and content as well as the two fundamental questions of strategy are intertwined rather than separate. This relationship and the question *how to get where to go* will be examined more in detail in the multiple retrospective case study.

Chapter 7

THE MULTIPLE RETROSPECTIVE CASE STUDY

7.1 Introduction

As discussed in Chapter Two, Couplet's third strategic challenge, non-mechanical systems, differed profoundly from the two other strategic issues facing the company, production and globalization. It was essentially a strategic puzzle, rather than a defined strategic issue, and it involved a complex foresight horizon without any defined industry borders or resources. Couplet's response was a successive development and creation of a strategy over time. At the outset the strategy did not emanate from the centre of the firm, not from its core actors or competences and not from the central position in the industry, but more from the periphery and border areas of the organization in cooperation with customers and through other cooperative arrangements. A newly recruited president from another industry did, however, play an important role.

The analysis and evaluation of this strategy-creation process essentially illustrates the two paradoxes mentioned in the introductory chapter. Strategic management and organizational change theories do not seem fully capable of handling this strategic phenomenon, involving complex foresight horizons, strategy creation and significant influences from peripheral actors. It was observed that there appears to be a research gap regarding strategy-making involving complex foresight horizons. A major reason why these aspects of strategy have not been sufficiently discussed, described and explained in strategic management is simply that it is laborious to model them and difficult to theorize about them. At the same time, they seem to be central issues in strategic management and strategy-creation. Strategy-creation involves the two fundamental strategy questions of *where to go* and *how to get there*, and it has aspects of both *strategy content* and *process*. It concerns all four of the basic areas of strategic management (IO and RBV perspectives, and strategy

formulation and formation views), which were sketched in the introductory chapter and discussed and evaluated in the last two chapters.

Even if that evaluation revealed a lack of understanding about strategy creation, several promising research areas to build on were identified: entrepreneurial and evolutionary economics, cognitive and "intraorganizational ecological" perspectives, purposive strategy formation and configurational views and more dynamic resource-based views (RBVs). It was noted that a common theme of these diverse research areas is *organizational learning*, and it was observed in the single in-depth study that strategy creation partially seemed to be a function of the character of the strategy process, the type information gathering, learning dynamics and the learning base used in the process.

The focus now turns to the multiple retrospective case study and a further investigation of strategy creation, different types of strategy processes, various knowledge coordination and combination mechanisms involved and a comparison in these respects with the single in-depth study. The MNCs and strategy-creation processes examined in the multiple retrospective study were determined in the methodology chapter. The study is devoted to processes of strategy-creation at three Swedish MNCs: Ericsson's entry into mobile telephony communications systems and creation of a mobile telephony business, Pharmacia & Upjohn's entry into smoking-cessation products and creation of a consumer healthcare business and AGA's entry into Eastern Europe and creation of an Eastern European industrial gas business. In terms of Ericsson it is important to observe that the investigation primarily concerns the mobile telephony systems and not primarily mobile terminals and telephones, even if both businesses developed hand in hand in the beginning and are not entirely separable.

These cases are investigated for their strategy content, inner and outer context, and process character. Special attention will be given to the role of various strategy sub-processes and learning dynamics identified in the single in-depth study described in Chapter Four. Another aim is to disclose why top management seemed unable to direct strategy creation and what their role in it might have been. Furthermore, the relationship between strategy content and strategy process will be carefully examined, and the implications for strategic management theories will be evaluated.

Below is a description of each case. A background and an outline are provided for each case company and industry, together with a general description of the strategic issues identified and their different origins and histories (see Table 7.1 below for an overview). The illustrations have been deliberately stripped of different groups' and individuals' views of the strategic issues and are presented as "clean" historical descriptions as discussed in Chapter Three. Chapters Nine and Ten, on the other hand, provide a richer description and illustration of each case, including views and beliefs of different actors, who are often quoted. The descriptions are followed by an analysis in terms of *strategy contexts, contents and processes*. The next chapter focuses on the relationship between strategy content and strategy process, and it provides an evaluation in terms of contemporary strategic management theory. The cases are further investigated and analyzed in Chapters Nine and Ten.

<i>Company</i>	<i>Traditional Industry</i>	<i>Sales MUSD (1998)</i> ¹⁴⁸	<i>Employees (1998)</i>	<i>Number of Markets</i>	<i>New Industry & Business</i>	<i>Time frame examined</i> ¹⁴⁷
Ericsson	Telecommunication equipment	22,843	103,667	140	Mobile Telephony/ Mobile Communic. Systems	1978-1998
Pharmacia & Upjohn	Pharmaceuticals	6,758	30,000	> 100	Consumer Healthcare/ Smoking Cessation	1978-1998
AGA	Industrial Gases	1,895	10,203	38	Eastern European Business/ Eastern Europe	1988-1998

Table 7.1: Overview of cases in multiple retrospective study.

¹⁴⁷ The time frames refer to the approximate period of the strategy-creation processes. See the methodology chapter (Chapter Three) for a discussion of the point at which to start and finish the examination of strategy process.

¹⁴⁸ 184.438MSEK (The figure has been converted into USD. The rate of exchange USD 1 = SEK 8.0740 per December 31, 1998 has been used).

7.2 Ericsson in the Telecommunication Equipment Manufacturing Industry – the Creation of a Mobile Telecommunications Business

7.2.1 Ericsson

Ericsson is a global supplier of telecommunication equipment and systems. The company produces wired as well as mobile telecommunications in public and private network systems. The company was founded in 1876 by Lars Magnus Ericsson and was in the beginning known as "Telefonaktiebolaget LM Ericsson", LME. It started out as a manufacturer of telephones, but it also operated concessions in its early days. In the early 1920's Ericsson entered automatic switching, and from then on its business centered on the design of telephone exchanges and switching. Subsequently the company moved into telex and data switching systems, cable and wire, transmission equipment, radio and defence electronics and components. With a limited home market, Ericsson expanded internationally at an early stage. Over 90% of its sales derived from foreign markets by the turn of the century.¹⁴⁹ Today (1998) Ericsson has 97% of its sales outside Sweden and has subsidiaries in over 100 countries on all continents. For an overview of some company data, see Appendix D.

Ericsson has cooperated extensively with the Swedish Telecommunications Administration or the Swedish PTT, Televerket,¹⁵⁰ throughout its history. This was also the case in mobile telephony, which integrates telecommunication and radio technology. Ericsson's involvement in the radio area dates back to the foundation of Svenska Radioaktiebolaget, SRA, in 1919. At this time, when Swedish radio broadcasting was about to begin, SRA was established by ASEA (later ABB), AGA and LM Ericsson and started to manufacture radio transmitting equipment. SRA commenced production of radio receivers in 1921. In that same year British Marconi became part owner of SRA, thereby giving SRA access to patents and radio communication technology. SRA became Marconi's representative in Sweden. In

¹⁴⁹ Sales outside Sweden dropped considerably during the depression and the Second World War but gradually increased again after the war.

¹⁵⁰ The Swedish Telecommunications Administration is comparable to a PTT, Post Telegraph and Telegraph company. PTT refers to government monopolies responsible for operating national postal and telecommunications services. The Swedish PTT, Televerket, was responsible for telephone and telegraph, but not postal, service. Today it operates in a competitive market and has been renamed Telia.

1927 Ericsson became the sole Swedish owner of SRA and the sole owner besides Marconi. Ericsson increased its share to 71% in 1965 (Meurling and Jeans, 1994).

For many years SRA was not a fully integrated part of Ericsson. With its own radio technology and markets, it operated independently of its principal owner. Mobile telephony in the Ericsson Group was developed by SRA. It has achieved dramatic growth, accounting for 2-3% of Ericsson's sales in the mid 1970's to around 70% in 1997. Ericsson has managed to gain over 40% of the world market in mobile telephone systems (LME, 1996).

From the early 1940's Ericsson was organized into different "divisions" (exchanges and telephones, transmission equipment, networks etc.), each with its own R&D and sales. Manufacturing and administration were, however, centralized. The enhanced focus on products was later followed by a strengthening of corporate staff functions in the 1950's and 1960's. Decentralization was extended during the 1960's and 1970's as more product areas were established (Attman and Olsson, 1976)¹⁵¹. From 1983 the Ericsson Group was organized into seven separate business-area profit centers. The main business areas were Public Telecommunications, BX and Information Systems - BI. SRA and mobile telephony was part of the Radio Communications business area, BR, the second smallest business area. Since then Ericsson has changed its organizational structure several times, moving from eight product-defined business areas to three in 1997 - Infocom Systems, Mobile Phones and Terminals, and Mobile Systems - reflecting the increased interdependence among products (LME, 1996). There is a greater focus on marketing, with local companies becoming more and more independent of the business areas.

7.2.2 The Telecommunication Equipment Manufacturing Industry

The telecommunications industry is a vast one; its revenues were 5.9% of the world gross domestic product in 1994.¹⁵² The focus here is on suppliers of equipment to network operators and, more specifically, mobile telephony equipment. The

¹⁵¹ References in the case descriptions are used when based on a particular single source and for specific figures.

¹⁵² \$1,430 billion according to the International telecommunications Union (Communications Outlook 1995, ITU).

telecommunication-equipment manufacturing industry has encountered dramatic challenges in terms of new technologies and market needs during the last 20 years. The industry has faced an increasingly deregulated and multifaceted operator industry, including new competitors, a surge of deregulation, and the break-up of national monopolies. Since moving from electromechanical to analogue and digital switch technologies, the industry has gone through continuous consolidation driven by increased R&D expenditures. The six largest global competitors (Alcatel, Siemens, Lucent Technologies, Ericsson, Northern Telecom and NEC) have a total market share of over 85% (1994).¹⁵³ Technological changes are continuing to influence the structure of the industry. The combination between telecommunication and data communication fields and ISDN technology¹⁵⁴ has brought the computer industry closer to telecommunications. The immense impact of internet technologies in the last few years has of course increased the complexity even further.

In particular, mobile telephony has grown enormously during the last ten years, providing a substitute for traditional wired communication. With the development of mobile telephony, the telecommunication-equipment manufacturing industry has seen a range of new competitors and customers. Nokia of Finland has become a major competitor in mobile telephone systems and in particular mobile phones. Furthermore, a number of smaller actors, supplying parts of the mobile telephony infrastructure system (base stations, combiners, repeaters etc.), have entered as well. In addition, consumer electronics companies have started to make mobile phones. The leading competitors in mobile telecommunication systems are Ericsson, Lucent Technologies, Motorola, Nokia and Siemens.

Mobile telephony subscriptions are now increasing by 50% a year (1997). Growth has continuously exceeded the most optimistic forecasts. Five hundred million subscribers worldwide by the year 2000 is mentioned as a possibility (LME,

¹⁵³ The figure is based on switch capacity or number of lines 1994 (Meurling and Jeans, 1995). A range of various acquisitions, mergers and strategic alliances have contributed to this consolidation. Philips' public telecommunications division merged with AT&T in the early 1980's and AT&T, later Lucent Technologies, also cooperated with GTE, part of which was acquired by Siemens. Alcatel is a merger between ITT and French CIT.

¹⁵⁴ Integrated Services Digital Network, ISDN, is basically a standard for integration of voice, data and video information in networks.

¹⁵⁵ A new telephone technology has emerged, Internet Protocol, IP, Telephony with a common software standard. Around 120 actors, among them Lucent, Microsoft and Intel (Forslund and Holmberg, 1997) are involved in this sector.

1996). If the present growth rate continues, mobile phones should overtake fixed phones by 2004, and in some regions mobile telephony already predominates (e.g. parts of China).¹⁵⁶ To put it simply, a cellular mobile telephone network incorporates the telephone itself, base stations which are connected to mobile telephone exchanges or switches, MTX, which in turn are linked to the fixed network.

7.2.3 Emerging Mobile Telecommunication Systems

The penetration by mobile phone networks soared in the late 1980's, and their growth continued during the 1990's, but the mobile phone concept is nothing new. AT&T opened the first commercial mobile system in 1946 in St. Louis, USA (Meurling and Jeans, 1997).¹⁵⁷ The Swedish Telecommunication Administration, or PTT (Televerket) inaugurated the first automatic commercial system in the world in 1956, a system without any manual switchboard assistance. Hence, the foundation for mobile telecommunication had already been laid in the 1940's and 1950's in diverse parts of the world.

At that time mobile telephone services were regarded as quite exclusive and were intended for transportation companies, physicians, taxi-cab services, businessmen, etc. Their global breakthrough did not arrive until after many years of technological and political/legal developments. Several technological innovations were made in the US, in particular the cellular concept,¹⁵⁸ which was presented by AT&T's Bell Laboratories 1947 (Meurling and Jeans, 1997). However, the development of mobile telephony in the US was slowed by the lengthy political and legal processes involving the Federal Communications Commission, FCC¹⁵⁹ and the US Congress concerning AT&T's monopoly role, potential deregulation and distribution of licenses for mobile telephone services.¹⁶⁰

¹⁵⁶ Financial Times, Wednesday, August 13, 1997.

¹⁵⁷ It was followed by systems in The Netherlands, Switzerland, Denmark and Germany.

¹⁵⁸ The basic idea is to reuse radio frequencies; an area is divided into several cells, each with its separate frequencies. Other frequencies are used in neighbouring cells, avoiding interference, but the original frequency can be reused in cells further away. The cellular apportionment has several technological and economical advantages.

¹⁵⁹ Federal Communications Commission, the federal government body regulating public communication systems in the US.

¹⁶⁰ FCC assigned a *tentative* authorisation for a cellular system already in 1968.

The Swedish PTT, Televerket, developed two generations of the automatic mobile phone system. Later a manual one was designed which covered the entire country (Mölleryd, 1996). Other Nordic countries had their own plans for automatic systems which later led Televerket to suggest a pan-Nordic system. In 1975 the Nordic PTTs presented a proposal for a joint automatic mobile telephone system in the Nordic countries. The Radio Laboratory at Televerket, with support from the Norwegian PTT, developed a new system in the 1970's. The first commercial cellular mobile phone network in the world, the Nordic Mobile Telephone (NMT) network, was introduced in 1981. The first cellular mobile phone network in the US was presented two years later.

7.2.3.1 Mobile Telecommunication Systems - External Context

Although some of the core technology for mobile phone networks had been developed early on - for example, the cellular technique - it would take many years until the technology had matured. It was not until transistors, microelectronics and computer technology were present that the modern networks emerged (Meurling and Jeans, 1997). And even though parts of the technology existed, it was highly uncertain whether there was a market potential for the product. Bell Labs at AT&T, which originally invented cellular networks, asked McKinsey to study mobile telephony and its market potential. McKinsey concluded that the potential was insignificant and firmly advised against involvement in mobile telephony.¹⁶¹

The NMT (Nordic Mobile Telephone) system was the very first cellular network, and the technology was still under development at that time. With the ongoing technological development in the late 1970's and early 1980's, it was highly unpredictable what the mobile phone system technology would look like in the coming years. Depending on customer demands and circumstances, new technologies had to be developed. Both switches and radio technology had to be adapted to meet various requirements and features. Furthermore, many telecommunication companies

¹⁶¹ This turn of events helped to give Ericsson a respite of some years, according to Jöran Hoff, Ericsson Mobile Systems, (Jöran Hoff, 1997).

which provided the infrastructure for the public networks did not have the necessary radio technology for the mobile phone networks.

Telecommunication companies were also concerned about the variation in mobile system standards among different countries. It would not be possible to develop future technologies for systems and terminals if each country had its own standard. Moreover, the possibility of market penetration would be limited, as terminals from one national system could not be used in another country. Discussions were going on about standardisation, but the outcome was uncertain. While the US had a common system, AMPS,¹⁶² there was uncertainty about the FCC's role. The FCC process for approving mobile telephone networks was quite lengthy and unpredictable. When the FCC finally invited operators to submit license applications, the specific criteria for evaluation were unknown. The uncertainty caused uneasiness among providers of mobile telephony infrastructure as well. In addition, questions concerning technology were raised by the rapid advancement in microelectronics and computers, a factor that would have a major impact on the future technology to be used.

The liberalisation and deregulation of telecommunications initiated in various parts of the world in the early 1980's also contributed to the uncertainty in the emerging mobile-phone system industry, but it provided opportunities as well. The trend started in the US and the UK, followed by the Scandinavian countries and later other countries. Subsequently the European Union agreed to open all EU telecommunications markets, and new actors entered the telecommunication industry from various directions. Telecommunication equipment suppliers found themselves facing new kinds of mobile-phone and public-system operators and, in some circumstances, privatized and vitalized PTTs. This change brought new requirements and demands for products and services.

In the beginning no one thought that mobile telephony would grow into a mass market. The NMT network was initially considered to be complementary to manual mobile systems. Mobile telephony was seen as more exclusive and directed toward professional use. In Sweden, as well as internationally, forecasts continuously

¹⁶² Advanced Mobile Phone System, an analogue standard specification developed by Bell Labs at AT&T.

underestimated the number of subscribers. When NMT was opened 1981, it was expected to have 40,000 subscribers in 1990; in reality, by that year it had almost 500,000. Again, when the digital GSM¹⁶³ standard was introduced in 1992, the initial demand forecast was for 25,000 subscribers in 1994; in that year it turned out to be 423,000.¹⁶⁴ Mobile phone network operators, governmental bodies, mobile phone infrastructure providers and mobile phone manufacturers all underestimated the tremendous growth of mobile telephony.

Attracted by this extraordinary growth, many new actors entered the industry. A range of operator firms penetrated the market together with numerous radio technology and telecommunication companies. Furthermore, consumer electronics companies entered the terminal or mobile phone markets. Traditional telecommunication equipment suppliers suddenly encountered a variety of new customers and competitors. The fact that they now faced customers ranging from governments to end-consumers, and competitors ranging from telecommunication switch manufacturers to consumer electronics companies, highly complicated the competitive situation.

7.2.3.2 Mobile Telecommunication at Ericsson - Internal Context

Ericsson and Svenska Radio Aktiebolaget, SRA, 71% owned by Ericsson and later wholly acquired, supplied switches and telephone terminals in the early Swedish mobile phone systems. Ericsson, however, was not particularly enthusiastic about mobile phone systems. Rather, the pull of demand from the Swedish PTT was what led Ericsson to become more involved.

The company was also asked to comment on and participate in studies of the development of the NMT system. However, it was the Swedish and other Nordic PTTs which were pivotal in developing and establishing mobile telephony in Sweden and the Nordic countries. Ericsson's lack of enthusiasm for mobile phone systems reflected its very small role compared to its other businesses and a belief that mobile telephony would continue to be of minor importance. In addition, in radio the

¹⁶³ Group Spéciale Mobile, later Global System for Mobile Service, the European digital standard.

¹⁶⁴ The Swedish Telecommunication Administration's figures cited in Mölleryd (1996).

company's involvement was in closed radio systems. Ericsson was far from alone in its assessment of a limited mobile phone market. For example, the NMT network was initially thought to be complementary to manual mobile telephone systems, and forecasts, no matter who prepared them, consistently underestimated the number of subscribers.

Telecommunication equipment manufacturers were asked in 1977 to submit proposals to provide the NMT network. Ericsson and SRA and their competitors - among them NEC, Motorola, Mitsubishi and Fujitsu - were invited to bid. Ericsson's Public Telecommunications unit was not especially interested in providing switches for mobile systems, but offered switches for the NMT since they were a long-term partner of the Swedish PTT and principal supplier to the Swedish fixed network.

Ericsson did not offer its latest technology at first, but it subsequently did so at the insistence of the Swedish PTT, which indicated that otherwise it might adopt the technology of NEC, the closest contestant.

At SRA, in Ericsson's much smaller Radio Communications area, enthusiasm for the NMT venture was greater, but SRA had no base stations at the outset. What it could offer was the base-station control unit (Meurling and Jeans, 1994). Focused more on the mobile telephone itself than on the mobile system, SRA upgraded a land-mobile product to become a mobile telephone or station.¹⁶⁵ It also acquired Sonab in 1978, a rival in radio technology and the leader in mobile stations in Sweden at that time. In the end, in hard competition with NEC, Ericsson won the order to deliver switches for the NMT network in the Nordic countries. Magnetic, another Swedish radio technology company, supplied the base stations, with SRA as sub-supplier of the control unit. SRA also supplied mobile telephones or stations for the system.

There was no particular integration of Ericsson's and SRA's products, mobile telephone switches and radio equipment, respectively. Rather these orders were seen as a part of normal day-to-day business. The orders were small, and the contract was of modest size from the viewpoint of Ericsson's corporate management. During the early years of mobile phone networks, Ericsson and SRA continued to submit separate

¹⁶⁵ The correct terminology here is mobile stations or terminals. At this time these were based on land-mobile products and were large and heavy units to be installed in vehicles (Meurling and Jeans, 1997).

offers for switches and radio equipment. There was no coherent arrangement for mobile phone systems.

7.3 Ericsson's Advance into Mobile Telecommunications

7.3.1 The First Cellular Mobile System in the World

In 1977 Ericsson won a major order together with Philips to supply Saudi Arabia with a fixed telecommunication network. Åke Lundqvist, President of SRA, managed to convince Björn Lundvall, CEO of Ericsson, to offer the Saudis a mobile telephone system as part of a subsequent follow-up order for switches and transmission. SRA and Ericsson did not have a complete system at that time, but they had the NMT system under development, and Philips was also about to develop one. However, Philip's system operated in the 160 MHz frequency range, which turned out to be occupied by the Saudi military. At that time Ericsson and SRA had been contracted for the NMT system in the Nordic countries. Therefore SRA suggested that SRA and Ericsson fill the entire Saudi order. This idea was supported by Håkan Ledin at Ericsson's Public Telecommunications, or BX, division. The radio stations were based on SRA technology and technology provided by the Swedish Magnetic Company. In addition, SRA delivered 8000 mobile terminals under the contract, thus creating a shortage on the Nordic markets. The first cellular mobile system in the world was put in service in Saudi Arabia in 1981 (Meurling and Jeans, 1997). It was based on NMT. The NMT documentation could be used by operators without cost to develop networks. It could also be used to develop and manufacture equipment by manufacturers such as SRA and Ericsson. The NMT in the Nordic countries was not in operation until a couple of months after the Saudi première.

At the end of the 1970's more PTTs had started to show an interest in mobile telephony, and the industry was invited to submit offers (Meurling and Jeans, 1994). SRA, or individuals at SRA, began to see a sizable potential market. However, there was still limited interest in mobile telephone systems at Ericsson and little integration of SRA's and Ericsson's switching units for mobile telephony. The products were offered independently to operators, even if SRA later received the marketing responsibility.

There was some tension between SRA and Ericsson's BX division, which regarded mobile telephony as another way among many others to sell switches for BX. Switches, in particular the new AXE switch, Ericsson Public Telecommunications' new digital switch, were the primary - and most sophisticated - products of Ericsson, accounting for more than 40% of sales in 1980. In comparison, SRA was a minor independent business, incorporating a variety of more or less profitable radio technology products. SRA was treated accordingly by the BX division and corporate management.

7.3.2 A Contract in the Netherlands

One of the countries where the PTT was about to set up a mobile telephone network was Netherlands. The Dutch PTT had specified NMT as its system, an open system in which equipment from separate suppliers could be used. From Ericsson there were separate offers as usual; the BX Division offered switches, and SRA radiotechnology. The PTT wanted Ericsson's AXE switch since it had a high capacity and was already part of the fixed network. However, Motorola was involved in the discussion as well and suggested a combination of AXE switches and its own base stations.

The Dutch PTT supported this concept. So did Ericsson at first, or at least part of BX. SRA had just started with its own base station, while Motorola had a long tradition in this area and was a powerful competitor. The arrangement could eventually lead to further AXE orders to be filled jointly with Motorola.

However, Åke Lundqvist, President of SRA, strongly disapproved. He argued that Ericsson should be a provider of systems in mobile telephony, and should furnish the whole package - switches and base stations - or nothing. Lundqvist's position brought matters to a head, causing considerable distress among some at BX. Ericsson would risk losing the entire order and would actually be declining an opportunity to sell its principal product. The Netherlands PTT and Motorola considered that agreement had been reached on the arrangement, which would include Motorola's base stations and Ericsson's switch. However, Lundqvist did not give up, but tried to convince the parties. He managed to obtain the passive approval of Ericsson's CEO, Björn Svedberg and the consent from the switching division. Prompted by Motorola,

the PTT now required a small-cell concept to suit the topography and the density of population in the Netherlands. At this time SRA still possessed only limited competence in base station technology, and, in particular, they lacked knowledge in the required small-cell technology. At that point Åke Lundqvist contacted a friend in the US who was a consultant and an expert on the small-cell technique, Chan Rypinski (Meurling and Jeans, 1994). Moreover, mobile telephony as a package concept was now endorsed by some more people at BX. With Åke Lundqvist playing the leading role, SRA and Ericsson finally managed to win the contract, which included a complete system of switches, base stations and cell planning services. Thus, SRA and Ericsson had begun to sell an integrated system and not separate parts of mobile telephony.

At SRA, which was increasingly becoming a driving force behind mobile telephony in the Ericsson group, it was felt that full integration was needed for the "SRA 8000 Automatic Mobile Telephone System," which was the NMT-based system offered. A joint group was first set up in 1981 to handle mobile system proposals. Later in the same year the Ericsson corporate management and the CEO, Björn Svedberg, gave SRA the responsibility for the business and the system as a whole, including base stations, switches and cell planning services. However, the BX division was to manufacture the switches and sell them to SRA. From the point of view of BX and corporate management, the business was not considered a critical one for Ericsson.

7.3.3 Entry into the US and the UK

Through the consultant in the Netherlands case, Åke Lundqvist happened to meet another US-based consultant, Jan Jubon, who urged SRA to enter the US. Lundqvist was interested, and the consultant was hired to submit a market report. More material on the US market was prepared by Mats Ljungren at SRA, who was subsequently given the assignment of marketing SRA's mobile telephony system in the US. Investigating the US market was something of a trial-and-error process.

SRA was still weak in base stations but had a strong switch in AXE, and BX had approved the US venture. Very few people from the company were in the US at

the outset, but subsequently more became involved. SRA and BX jointly prepared offers for the various operators. A brochure was developed on SRA's system for AMPS, the US mobile telephony standard. The CMS 8800, which was SRA/Ericsson's name for the system, was marketed to various potential operators applying to the FCC for licenses for mobile telephone networks.

In 1982 it became clear that the SRA/Ericsson system had been used and specified in 30% of the applications to FCC. This news did not mean that any contracts were assured, but it was positive, and somewhat surprising. The main competitors in the US market were Motorola, together with Northern Telecom, EF Johnson, Harris Corporation and NEC. In fact, SRA and Ericsson were not awarded any contracts at first, but in May, 1983, they obtained their first order for a mobile telephony network system in Buffalo in competition with Motorola and NEC. Later the same year, another important contract was won in Chicago. Subsequently the US organization was strengthened in order to fulfill all requirements regarding planning, installation and testing. More contracts followed in other parts of the US.

SRA/Ericsson's competitors now had to take them seriously, but their market position was far from well established. Soon competitors were offering creative financing solutions, a challenge to SRA since the risks involved were high and financing was not one of the company's strengths. While this problem held SRA back at first, later a "pay as you grow" strategy was implemented in which the operator repaid his loans as he obtained more subscribers.

At the turn of 1982/83 Marconi's interest in SRA was bought by Ericsson. SRA thus became a wholly owned company under the name of Ericsson Radio Systems AB (Inc.), ERA. One reason for taking this step was that Marconi was owned by one of Ericsson's competitors in switching. ERA was still seen as a minor part of Ericsson. The entire Radio Communications business area only accounted for 5% of Ericsson's sales in 1982. It was not considered to be of major strategic importance.

Instead, corporate management was focused on an information system strategy. The emphasis was on the "office of the future", including office switches and network communications, computer terminals, personal computers and other computer and text-processing systems that would create the paperless office. The

main concept in the vision of corporate management and CEO Björn Svedberg was integrated telecommunication and computer technology.

Beginning in 1981, the newly created business area Ericsson Information System, EIS, received considerable attention, resources, capital and manpower. Two main acquisitions were made to obtain the new technologies needed: in 1980, Datasaab, a computer division of Saab and, in 1981, Facit, a Swedish manufacturer of office machines.

EIS was a major investment and diversification for Ericsson. The new division expanded rapidly, from 13,239 employees and 23% of corporate sales in 1982 to 20,785 employees and 31% of total sales in 1985. However, that same year it reported a loss of 806 M SEK (roughly \$100 M). Integrating telecommunication and information technology had been a failure. The division was restructured and renamed "Business Communication," and the main part of its operations, in the Data Systems and Office Equipment divisions, was later sold to Nokia in 1988.

Understandably, this process required considerable attention from top management. ERA was still regarded as a minor business and was treated accordingly by corporate management and, in particular, by managers in switching. Friction was common. For BX the use of AXE in mobile telephony was a specialized and minor application, a negligible business in the beginning. ERA was even considering the development of its own switch, which would make the unit less dependent on BX. Another reason for ERA to have its own switch was that the AXE switch was too large and costly for small networks in the US, and Motorola and AT&T had quite small switches at this time. The fact that the Radio Communications business area was having difficulties with its land-mobile radio and paging business, which reported a loss of 32 M SEK in 1984, also contributed to the somewhat skeptical attitude towards ERA from the rest of Ericsson.

Subsequently deregulation started in Britain as well, and TACS,¹⁶⁶ a modification of the American AMPS standard, was agreed upon after some controversy between the two national network operators. In 1983 Vodafone, one of two British operators, chose ERA as infrastructure supplier. The company won the contract in competition with AT&T and Motorola (Meurling and Jeans, 1994). This

¹⁶⁶ Total Access Communication System

step was a bold venture by ERA, as it involved expansion from a small sales organisation to a large manufacturing and R&D company in the UK at the same time as the company was entering the US. The British contract was fulfilled in 1985.

7.3.4 New Standards and New Markets

The Nordic PTTs decided to upgrade the NMT system in 1983. ERA, which still lacked complete base station technology and products at this time, bought the Swedish radio technology company Magnetic same year. Magnetic had earlier supplied base stations to ERA. Åke Lundqvist tried to convince the Swedish PTT to choose AMPS or the British TACS standards instead of an NMT upgrade (Mölleryd, 1996). The reason was that ERA had already started the development of base stations for AMPS, building on their accomplishments in the US, and later they did the same for British TACS. The Nordic PTTs, however, chose an NMT upgrade, NMT 900. ERA, or Magnetic, received orders for base stations in Sweden. A strong competitor was Radiosystem, a spin off from Magnetic, which received contracts in both Sweden and Norway (McKelvey et al., 1997). NMT 900 was opened in August 1986.

After a slowdown, partly resulting from difficulty in providing financing solutions, the US business picked up again. ERA had some success in Canada in 1984, and additional contracts were won in Houston and major cities in Ohio 1984 and in California in 1985/86 (Meurling and Jeans, 1994).

At Ericsson attitudes continued to differ between ERA and BX. Considerable resources were required for the entry into fixed telephony in the US, while at the same time ERA needed assistance in switches for mobile telephony there. People at ERA were more inclined to move forward in mobile telephony in general, while managers at BX continued to have doubts.

Moreover, even though growth was strong, mobile telephony was still only a small part of Ericsson, accounting for barely 4% of total corporate sales in 1985, whereas sales of switches were six times as great, not including switches for mobile-telephony applications (LME, 1985). The switch for mobile telephony was sold through ERA, which however did not control it since BX sold it to ERA on the basis

of business negotiations between the two of them. This relationship also generated friction, since ERA thought the prices were too high.

Besides the contracts in the US, ERA was able to enter markets in the Far East - Thailand and Indonesia - and also Australia in 1985 (LME, 1985). In 1987, ERA won a prestigious contract for a network infrastructure in New York City. By now Ericsson had definitely established itself as a serious competitor in North America (Meurling and Jeans, 1994).

An obvious problem with various national analogue mobile telephone networks (NMT, TACS, etc.) was that terminals or telephones could not be used across borders. The standardisation organization of Western Europe's PTTs, CEPT, la Conférence Européenne des Postes et Télécommunications, Conference on European Posts and Telecommunications, appointed a group to work on a new common standard for mobile telephony in 1982. This group, Groupe Spéciale Mobile, GSM, was to decide on recommendations for a new system.

Ericsson had a strong position with its involvement in both NMT and TACS. The telecommunication industry in France and Germany responded by proposing a different technology from that of the Nordic countries. The Nordic representatives suggested a narrow-band solution, more suitable for less populated areas, while Continental Europe proposed a broad-band solution, more appropriate for urban areas. The Nordic solution won in a referendum among the European countries in 1987. Ericsson had initiated collaboration on the narrow-band technology with German Siemens and French LCT. The fact that these actors both ultimately promoted this technology influenced the final decision (Meurling and Jeans, 1994). Hence, the GSM system that ultimately emerged was close to the system on which ERA had been working. It was also advantageous for Nokia, while the German and French telecommunication companies were clearly behind these two Nordic competitors. The network operators began to solicit bids for infrastructures in 1988.

The switch division within the Public Telecommunications business area controlled the development of GSM. However, other technological and development responsibilities for mobile system switches were shifted to ERA in 1988. Controversies had continued between parts of the switch division and ERA, but more people now seemed to realize the impact of ERA and mobile telephony. Growth was

very strong, and ERA gained almost 40% share of the world market for mobile telephony systems. Compared to other parts of Ericsson, ERA remained rather small, however. Mobile systems and telephones together still accounted for less than 10% of total Ericsson sales, while the same figure for switches in Public Communication were 36% (LME, 1988).

European PTTs were the main GSM network operators initially, besides two private operators, Swedish Comviq and British Vodafone. The first GSM contract for ERA was signed with Vodafone in 1988 (Meurling and Jeans, 1994). Ericsson cooperated with Matra in France and received orders from the French PTT as well. Subsequently orders followed from PTTs in Switzerland, Italy and Denmark in 1989 (LME, 1989).

The first GSM installations were made in the most populated areas, where Ericsson had an advantage because of its high-capacity system. This factor was one reason why Ericsson received most of the early GSM contracts (Meurling and Jeans, 1994). Another Swedish supplier of mobile telephony equipment, Radiosystem, which produced base stations, combiners, etc., was badly prepared for the digital GSM technology. The small company had limited competence in computer programming and few resources to support the transition from analogue to digital technology (McKelvey et al., 1997). Radiosystem had earlier been cooperating with SRA, but ERA withdrew from the arrangement after Radiosystem had decided to compete directly with ERA in base stations for the NMT 900 system.

Now Ericsson acquired Radiosystem.¹⁶⁷ This step compensated for Magnetic's outdated technology, and it increased production capacity. Furthermore, it augmented Ericsson's skills in some radio technology areas and blocked others from taking over Radiosystem. However, the Chairman of the Board of Ericsson, Hans Werthén, did not support the acquisition (Mölleryd, 1996).

Lars Ramqvist took over as President of ERA in 1988. At this time Åke Lundqvist was temporarily occupied with strategic issues in a staff position. In 1989 a joint venture was set up with GE's operations in mobile communication, thus making Ericsson the second largest mobile communications supplier in the world,

¹⁶⁷ Radiosystem was bought for 465 M SEK. The company had sales of 147 M SEK and had 147 employees at the turn of 1987/88 (Mölleryd, 1996, p.56).

after Motorola (LME, 1989). Åke Lundqvist was appointed President of Ericsson-GE Mobile Communications.

Germany became the third country, after Sweden and Britain, to allow a second GSM operator in addition to the PTT. Ericsson obtained a contract in 1990 with the German private network operator Mannesman Mobilfunk. Orders were also signed in Sweden, Norway and Finland that same year, and Ericsson had contracts with ten out of the 18 European GSM countries by then (LME, 1990). The digital mobile telecommunication standard for Europe, GSM, was finally launched in 1991 after several delays. Besides digital GSM, in which sales were increasing, analogue systems were sold worldwide, in Mexico, Eastern Europe and China.

Internally ERA was treated with increasing approval as the world market for mobile telephony grew and ERA's sales grew with it. Radio Communication increased its share of total Ericsson sales from 22% in 1989 to 27% in 1990. The same figures for Public Telecommunication, the largest business area, were 42% and 44%, respectively.

Lars Ramqvist was appointed new CEO of Ericsson, succeeding Björn Svedberg in 1990. Kurt Hellström became the President of ERA. Since Ramqvist came from ERA, his appointment emphasized its importance to Ericsson. Some animosity continued between radio and switching, but it diminished after the entire responsibility for mobile telephony, including all switching development, was transferred to Radio Communications in 1992. The two following years showed immense and sustained growth. 1993 was a turning point, since Radio Communications passed Public Telecommunication in sales with 40% of total sales, compared to 32% for PT. Mobile telephony alone (apart from other product areas in Radio Communications) had achieved sales equal to the total for Public Telecommunication, 32% (LME, 1993; LME 1994).

Ericsson also enjoyed repeated success when the digital standard in the US was adopted. Digital AMPS, D-AMPS, based on a technology related to that in the European GSM, was put into service in 1993 (Meurling and Jeans, 1997, p.103).¹⁶⁸ With digital mobile telephony in the US, Ericsson managed to increase its market

share there considerably. The company has also had similar successes in another digital system, the Personal Communication System, PCS, in the US.

Moreover, Ericsson became a competitor in the segment based on the Japanese digital standard, Pacific Digital Cellular, PDC. In general the Asian markets have expanded rapidly for Ericsson during the last few years, especially Japan and China. Other Asian markets include the Philippines, India, Indonesia, Taiwan and Korea (LME, 1996).

The growth of Ericsson's Mobile systems and terminals was tremendous. In 1997 total mobile telephony sales had reached 70% of the corporate total, and the number of employees had almost quadrupled since 1992. In 1997 the Radio Communication business area was divided into two new business areas, Mobile Systems, including mobile system infrastructure equipment, and Mobile Phones and Terminals, with 44% and 26% of total sales, respectively. Sales increased by another 10% between 1997 and 1998 and reached 184,438MSEK, more than twice as much as in 1994.

7.4 Pharmacia & Upjohn in the Pharmaceutical Industry – Emerging Consumer Health care Markets

7.4.1 Pharmacia & Upjohn

Pharmacia & Upjohn is the result of a continuous process of consolidation, mergers and acquisitions which started in the Swedish market. Pharmacia was founded in 1911 in Stockholm and moved in 1950 to Uppsala, a university town north of Stockholm, where its principal location remained over the years. One of its main products was Salazopyrin, an agent for the treatment of certain inflammatory intestinal diseases, introduced in 1941. Another important product was Macrodex, a plasma substitute and anti-coagulant, launched in 1947.

Pharmacia remained a fairly small pharmaceutical company throughout the 1960's; the company had 600 employees in 1964 (Frankelius, 1999). Its parent

¹⁶⁸ D-AMPS is based on TDMA, Time Division Multiple Access. There is also another, competing, technology, CDMA, Code Division Multiple Access, which is used by Motorola and Lucent, in order to overcome the Europeans (Meurling and Jeans, 1997, p.103).

company, AB Fortia, was listed on the Stockholm Stock Exchange in 1969, and the company started a period of growth at that time. It grew organically through its success with several therapeutics during the 1970's. Debrisan, a wound-cleansing product, was launched in 1977, and Healon, an aid component in eye surgery, in 1979. The company was organized into three divisions in 1975 (Pharmacia, 1984): Pharmacia AB (pharmaceuticals), Pharmacia Diagnostics (diagnostics), and Pharmacia Fine Chemicals AB (separation aids).

In the beginning of the 1980's, the company focused on expansion in biotechnology and started to grow more aggressively via mergers and acquisitions in order to become a giant in that field.¹⁶⁹ In 1981 Pharmacia-Fortia became the first Swedish company to issue shares in the US. Several pharmaceutical firms were bought during the early 1980's, but the major expansion came in 1986. In that year the company acquired AB Leo - a Swedish pharmaceutical company, LKB Produkter - Swedish specialists in chemistry equipment, Intermedics Intraocular Inc - an American specialist in intraocular lenses, and another American company, Deltec Systems - specialists in drug-delivery pumps and infusion technology (Pharmacia, 1986). In 1987 Pharmacia's sales were 6,101 MSEK, and the company had 9,380 employees (Pharmacia, 1987).

Leo, situated in Helsingborg on the southwest coast of Sweden, was founded in 1914 by a Danish pharmacist who later was one of the founders of Ferrosan, subsequently merged with Leo. Leo's main therapeutic areas were insulin and analgesic (Albyl) products and later hormone preparation (Gonadex). Leo was a highly innovative pharmaceutical company focused on niche prescription pharmaceutical products. During the 1950's the company started to focus on cancer treatment (Frankelius, 1999) and launched Estradurin in 1957 and Estracyt in 1972. Research in smoking cessation started in 1968, and a nicotine chewing gum, Nicorette, was put on the market ten years later.

Mergers and acquisitions in the Swedish pharmaceutical industry had started early, but the pace of consolidation increased considerably during the 1980's. In 1983 Leo was bought by Sonesson, which in 1984 also purchased Ferrosan, another

¹⁶⁹ See Andersson (1996a and 1996b) for a description and an analysis of the development in biotechnology in Sweden and at Pharmacia.

Swedish pharmaceutical company. Ferrosan had products in several therapeutic areas: anticoagulants (AP - Aperkumarol), tuberculosis treatment (PAS - Para-aminosalicylsyra), ovulation stimulants (Sexovid), neuroleptica (Buronil) and psychopharmacological drugs (Frankelius, 1999). Following the acquisitions, Leo and Ferrosan was integrated into one company, Leo. Leo was the biggest of Pharmacia's acquisitions in 1986 and had sales of 929 MSEK and 1,120 employees (Pharmacia, 1986). The Pharmacia – Leo combination was divided into two main segments, Biotechnology and Health care. The main focus in Pharmacia, as in Leo, was on prestige, high-margin prescription pharmaceuticals rather than on consumer-related OTC and smoking-cessation products.

The consolidation process in the Swedish pharmaceutical industry continued in the late 1980's, and in 1989 Procordia, a state-owned conglomerate, acquired Pharmacia, which was then merged with KabiVitrum, a pharmaceutical company in the Procordia group. KabiVitrum was itself the result of a merger between Kabi and Vitrum.

The origin of Kabi was a beer brewery named Stockholms Bryggerier, founded in 1889. The company entered pharmaceuticals in 1933 via a beer-yeast product, Fervin B. Later various vitamin products, among them Ceflavin and Rosacin, were launched (Nyquist, 1992). Kärnbolaget, a company producing starch-based binder for industrial use, was bought in 1934 and became the company name (Frankelius, 1999; Nyquist, 1992). Penicillin research began in 1944, and production started in 1948. Kabipenin was one of the first penicillin products. Research on plasma substitutes started in 1941 and resulted in two products, Albumin in 1949 and Gammaglobulin in 1950. Kabi (the new company name after 1950)¹⁷⁰ launched a series of plasma products in the following decades.

Kabi had sales of 148 MSEK and 1000 employees in 1969-1970 (Nyquist, 1992). In the late 1969's research projects were started in the growth hormone area, resulting in the introduction of Crescormon in 1971. Based on DNA technology, research in that field continued. Somatonorm was launched in 1985, and Genotropin, in 1987 (Frankelius, 1999). Genotropin was to be one of Kabi's and later Pharmacia and Pharmacia & Upjohn's best-selling products.

¹⁷⁰ Kabi is an abbreviation of *Kärnbolaget Aktiebolag Biokemisk Industri*.

Kabi went through a crisis in the mid 1980's but was restructured and started an aggressive growth strategy in the late 1980's. The West German pharmaceutical company Pfmmer & Co. was acquired in 1988, and the Spanish company Fides was bought in 1989.

Vitrum was founded in 1877 and was primarily a pharmacist trading company at the outset (Nyquist, 1992). It started production of insulin during the 1930's and launched a nutrition product in 1944 (Aminosol). Another nutrition product was Intralipid, put on the market in 1962. The company was sold to Apoteks-societeten, the pharmacist society, in 1959, and it became state-owned after the nationalisation of the pharmacies in 1970 by the ruling party in Sweden, the Social Democrats. Kabi, which was owned by Pripps Bryggerier, the result of a merger between two brewing companies, Stockholm Bryggerier (Kabi's owner) and Pripp & Lyckholm, became state-owned as well. The Social Democrats had ambitions to socialize the whole pharmaceutical sector in Sweden. Consequently the Swedish state acquired 65% of the shares of Kabi in 1969, and the remaining 35% was bought in 1971 (Nyquist, 1992).

The Kabi Group, including Kabi, Vitrum and ACO läkemedel - a pharmaceutical group within the pharmacist society - was formed in 1972. The group then had sales of 247 MSEK and 1,800 employees. The company name was changed afterwards to KabiVitrum. The company was subsequently integrated into Statsföretag AB, later Procordia AB, a Swedish state-owned conglomerate. KabiVitrum had sales of 900 MSEK at the time of the merger with Pharmacia in 1989. The new Health care division in Procordia had of sales of 12,888 MSEK and consisted of the pharmaceutical company Kabi Pharmacia AB, with 8,000 employees, the biotechnology company Pharmacia Biosystems AB, with 4000 employees, and Meda AB, a company that marketed pharmaceuticals from foreign suppliers in the Nordic countries and was later divested in 1991.

Kabi Pharmacia, later named Pharmacia, remained focused on growth and continued to acquire companies internationally. The Italian company Pierrel, with sales of approximately SEK 1 billion and 900 employees, was bought in 1992, and another Italian company, Farmitalia Carlo Erba (FICE), was acquired in 1993. The acquisitions were primarily motivated by sales and marketing synergies. After the

acquisitions Pharmacia's sales rose to 26,450 MSEK, and the company had 17,956 employees (Pharmacia, 1994). The primary product areas were oncology (13%), clinical nutrition (13%), (OTC-related) local products (12%), growth hormones (10%), eye surgery (9%), a range of other areas between 8% and 4% of sales (thrombosis, allergy, anti-infection, CNS, autoimmunity) and smoking cessation, which accounted for 3% of sales (1993, Frankelius, 1999, p. 286).

Pharmacia had become one of the largest pharmaceutical companies in the world. It was highly internationalized, though not global since its presence in the US was limited. Europe accounted for 60% of sales, with Italy (12%) and Germany (10%) as the largest markets, Japan accounted for 16%, the US for 14% and other markets for approximately 10% (Pharmacia, 1994). Pharmacia needed a better marketing organization and resources on the US market in order to become a truly global pharmaceutical company. In late 1995 Pharmacia announced that it would merge with the American company Upjohn. The Upjohn Pill and Granule Company was founded in Kalamazoo, Michigan, in 1886. The company started out making pills that would dissolve more easily. It was family-owned and remained so until the merger. The company mainly grew organically, and its principal product areas were in infectious diseases, CSN and inflammatory diseases.

Pharmacia & Upjohn was the result of a continuous merger and consolidation process over more than 140 years, since the start of the very first companies in the group. It consisted of around 25 merged companies, with the major mergers being the ones in the 1990's: KabiVitrum and Pharmacia, Kabi Pharmacia and Farmitalia, Carlo Erba and, finally, Pharmacia and Upjohn through which the company became a major global competitor - the ninth largest in the world at the time - in the pharmaceutical industry.

The Pharmacia & Upjohn merger turned out to be difficult, and the company went through a crisis and a series of CEO changes during 1996 - 1997. A new CEO, Fred Hassan, led a turnaround in the following years. The company's main businesses in 1997 were Rx Pharma (prescription pharmaceuticals), Consumer Health (OTC products, smoking cessation and hair-loss treatment), Animal Health (pharmaceuticals and additives for livestock and pets), Diagnostics (diagnostics for allergy and asthma), PCS, Pharmaceutical Commercial Services (supplier of bulk pharmaceutical

chemicals and dosage forms) and Nutrition (intravenous nutritional solutions). Nutrition was later placed under a separate jointly owned company in order to be divested.

The company's most important products are: Genotropin (growth hormone), Kabi; Xalatan (glaucoma treatment), Pharmacia; Nicorette (smoking cessation), Pharmacia (originally Leo); Camptostar (cancer treatment), Upjohn; Fragmin (thrombosis), Kabi and Detrusitol (overactive bladder), Kabi (Frankelius, 1999; Pharmacia & Upjohn, 1998). Sales increased considerably on the US market because of the merger, and the geographic distribution of sales after the merger was the following: US (37%), Japan (8%), main European markets (29%, including Great Britain, France, Germany, Italy, Spain and Sweden) with Italy accounting for 7%, Germany for 6% and Sweden for 4%; finally, other countries accounted for 26%. For an overview of some company data see Appendix E.

7.4.2 The Pharmaceutical Industry

The pharmaceutical industry is research-intensive. R&D accounts for 10-20% of sales and influences most of the industry's activities: the development of new pharmaceuticals, the research-intensive production and product development and patent protection of existing products. A pharmaceutical company is essentially equivalent to its products and particularly its future products. It is the products in the pipe-line, to be released in the future, that are important in the valuation of pharmaceutical companies. It takes years to develop a new drug, sometimes over a decade, and costs have steadily increased. This factor has resulted in an intensified consolidation process during the last two decades. Nevertheless, the industry is still largely fragmented, with the largest companies holding 4-5% of the total market, which is estimated at 250 billion USD and has a growth rate of 7-8% per year. However, the companies have substantially larger market shares within particular therapeutic segments (e.g. heart & thrombosis, cancer, CNS, ulcer, asthma). The largest single market is the US with 33.3% of world total sales. It is followed by Japan, Germany, France, Italy, Brazil and UK.¹⁷¹

¹⁷¹ 1996 figures: Financial Times, 980316 and IMS.

There have been several mergers throughout the history of the pharmaceutical industry, but the major ones took place in the 1970's (e.g. Ciba and Geigy, Switzerland, and Warner-Lambert and Parke-Davis, USA) and especially in the 1980's and 1990's. Bristol-Myers Squibb and Smithkline Beecham were formed in the late 1980's, and subsequently American Home Products bought American Cyanamid, Glaxo acquired Wellcome, and Pharmacia and Upjohn were merged. Ciba and Sandoz formed Novartis in 1996, and a year later German Boehringer Mannheim was bought by Swiss Roche. In 1998 Swedish Astra merged with British Zeneca, and German Hoechst and French Rhone Poulenc merged to form Aventis.

The primary purpose of the mergers has been to benefit from synergies in terms of R&D and marketing, since the costs of both have increased. While many smaller pharmaceutical companies have been more innovative and have been able to grow faster than their merged rivals, the trend of mergers and acquisitions seems to be continuing. The three largest companies - Merck, Novartis, and Glaxo Wellcome - have an equal market share of 4.2% each. They are followed by Pfizer and Bristol-Myers Squibb, both with 3.9% market shares, and Johnson & Johnson (3.6%), American Home Products (3.1%), Roche (3%), Eli Lilly (2.9%), SmithKline Beecham (2.9%) and Astra (2.8%). Next follow several companies with market shares from 2.5% to just above 2% (Abbott, Hoechst, Schering-Plough, Warner-Lambert, Bayer) and some companies with world market shares between 1.8 and 1.4% (Rhone-Polenc Rorer, Pharmacia & Upjohn, Zeneca, Boehringer Ingelheim). In addition to these major pharmaceutical companies, there is a whole range of smaller regional and local companies.¹⁷²

The character of the large pharmaceutical companies differs, some being focused on pharmaceuticals only, while others are active in sectors such as chemicals, animal health and food components. For example, Merck derives 60% of its sales from pharmaceuticals; the corresponding percentage for Novartis is 34% and for Glaxo Wellcome, 100%.¹⁷³ In OTC, or non-prescription products, the major companies are SmithKline Beecham, American Home Products, Bristol Myers Squibb, Procter & Gamble, Glaxo Wellcome and Johnson & Johnson. Besides self-

¹⁷² All figures 1998: Affärsvärlden, 990331 and IMS.

¹⁷³ Financial Times, 980202.

medication products, OTC products would include herbal remedies, oral-care products, baby food, slimming products, and many others.

7.4.3 An Emerging Market in Smoking Cessation and Consumer Health care

Until Ove Fernö's initial research on a cigarette-replacement drug, there was no smoking-cessation research, market or products. Leo's (later part of Pharmacia & Upjohn) Nicorette product was the very first of its kind in the world, and many years passed before other pharmaceutical companies entered the market. Not until the beginning of the 1990's did competitors start to launch their own products. Ciba-Geigy, and later Novartis, SmithKline Beecham, Warner-Lambert and some smaller pharmaceutical companies entered the market with nicotine-patch products.

By this time the main focus was on transferring the smoking-cessation products to a non-prescription or OTC status as soon as possible, and on marketing the products directly to final consumers. The same development was going on more generally in the pharmaceutical industry. Several different factors contributed to the increased emphasis on consumer health care and self-medication. A major reason was that health care costs increased dramatically during the 1980's and 1990's and became a heavy burden on budgets in developed countries. This trend was partly due to demographic developments, with a sharp increase in the number of people above 65. Since the cost of prescription drugs is mostly reimbursed by governments, while OTC products are paid for by the consumer, the number of OTC products has increased as a result of government efforts to save money in their health care budgets; products are transferred from a prescription status to an OTC status in order to reduce government spending. There have also been deregulation and relaxation of the rules governing pharmaceutical distribution and marketing, a factor which has helped OTC products. It has become easier to reach final consumers with diverse promotion and sales activities. In addition, health consciousness and interest in self-medication have increased. From the pharmaceutical companies' point of view, it is advantageous to obtain reclassification of prescription products to an OTC status in order to maintain sales levels after patents have expired, since the products can then be more intensively

marketed to final consumers. A change of status can more than double sales, even if margins are considerably lower.

7.4.3.1 The OTC and Consumer Health care Market – External Context

Although nicotine substances and chewing gum both were well known, the combination of the two was entirely new. Since there were no smoking-cessation products on the market, there was no established technology, either. The pharmaceutical industry had not previously been using nicotine, which was generally considered to be an addictive poison that did not belong in pharmaceuticals. It was not clear what dosage form would be optimal, but at an early stage the focus was on chewing gum. Later, when patch technologies had been further developed, nicotine patches became another distribution form. The greatest challenge was to ensure appropriate bioavailability (stability and durability) of the nicotine in the various distribution forms. The dose had to last and at the same time be diffused in a steady flow. There were major problems in terms of achieving this. It was uncertain what dosage forms would be best and, in particular, what form consumers would prefer. Another difficulty was the reclassification of smoking-cessation products as non-prescription. It required further development work, tests and documentation to submit to governmental bodies (FDA, etc.). This was also the case with other reclassifications from prescription to OTC; these required a "second round" of development, which had not previously been necessary when pharmaceuticals for the most part remained within the prescription category.

It was highly uncertain what the market for a smoking-cessation product would be when the first product was released. Some thought the market was immense, similar to the cigarette market, while others saw a very limited demand for a smoking-cessation product. Still, for several years after the first product had been launched, many pharmaceutical companies did not believe in the smoking-cessation market. There was considerable confusion over whether smoking-cessation products was a drug or a food stuff, whether it belonged to the pharmaceutical industry; some thought that the food or tobacco industry would be a more appropriate one for smoking

cessation. One important question was if smoking was to be classified as a disease, which was the case in some Western countries, but not in many others.

There was also ambiguity about market focus. Should the focus be on the prescription market of physicians or the non-prescription market of end consumers. Marketing and promotion in the pharmaceutical industry had traditionally been focused on doctors and pharmacists rather than end consumers. Further, it was uncertain what sales and marketing methods to use. The initial marketing efforts were predominantly based on the traditional ways of selling pharmaceutical products, via general product information, conferences and advertisements in professional journals. Later, sales and marketing were geared towards end consumers, but the positioning was difficult since there was only one actor on the market initially.

Moreover, there was uncertainty about the sales, marketing and promotion of other OTC products. Sales methods had traditionally been restrictive and regulated by the industry itself as well as governmental authorities. However, as more drugs were released for non-prescription sales and interest in self-medication grew, the pharmaceutical industry increasingly sought to reach end consumers. The question was which forms of marketing the pharmaceutical companies could use and which would be allowed. There were ongoing discussions between the industry and governmental bodies about this issue. It was not even clear within the pharmaceutical industry itself whether it produced and sold a pharmaceutical drug or a consumer product.

Since smoking cessation was a totally new product category in the pharmaceutical industry, regulatory bodies had no experience and no criteria relevant to its production and sales. Essentially there were no regulations or standards. Thus, ambiguity prevailed in all aspects of regulation and legal requirements regarding smoking cessation. FDA had no expertise at all in the field when the first product was to be launched in the US. Pharmaceutical companies (primarily Leo, later Pharmacia & Upjohn) cooperated closely with the FDA and other governmental authorities in developing regulations in order for products to be released. Similarly, regulations for removing the prescription requirement were unclear in general and had to be further developed, since that practice had previously been less common earlier.

7.4.3.2 Pharmacia & Upjohn and the Consumer Health care Market – Internal Context

The Swedish navy was having problems with smoking on its submarines in the 1960's and turned to the University of Lund to help them out. The university, in turn, asked Leo, a local pharmaceutical company, for assistance. A researcher at Leo, Ove Fernö, became interested in a possible substitute product for smoking and started to research the area. Soon he realized that there was a highly promising business opportunity in developing a smoking-cessation product.

However, Leo and the pharmaceutical industry in general were not particularly interested. While at Leo, Ove Fernö invented the nicotine chewing gum, but smoking cessation was considered somewhat foreign by in the company and pharmaceutical industry. Indeed, OTC products in general were not considered to be of strategic importance. They had a lower status in the industry, particularly because of their smaller margins compared to patented prescription pharmaceuticals. Throughout the consolidation process in the Swedish, European and US pharmaceutical industry, smoking-cessation and OTC products for consumer health care played an insignificant role in corporate strategy and the various mergers and acquisitions. It was acknowledged that it might be beneficial to have some OTC products, but, as noted above, they were not considered strategically significant.

The consolidation of the Swedish and global pharmaceutical industry was going on while smoking cessation and consumer health care was being developed in a remote part of Pharmacia. At that time, the companies were interested in prescription pharmaceuticals; smoking-cessation and other OTC products for consumer health care were not given consideration in the consolidation process. Meanwhile, however, smoking-cessation and OTC products were growing into a more strategic area, when life cycle management started to be acknowledged. Even if consumer health care had not been in focus in the process of mergers and acquisitions, it subsequently turned out to be of major importance for Pharmacia & Upjohn's strategy.

7.5 Pharmacia & Upjohn's Entry Into the Consumer Healthcare Market

7.5.1 Developing and Marketing a Smoking Cessation Product

Ove Fernö saw great potential in the smoking-cessation product, but there was not much support for it at Leo or generally in the pharmaceutical industry. Nicotine was regarded as an addictive poison, and chewing gum had no traditional pharmaceutical uses but was considered an "unscientific" product and inappropriate in a pharmaceutical context (Urde, 1997). Several times the termination of the project was under discussion. The work on the product had to be conducted partly under cover.

Nevertheless, the finalized product was launched on the Swiss market in 1978 and was branded "Nicorette", it was later launched in England and in Sweden 1981. However, the challenges and problems for the group behind the product continued. The Swedish pharmacists were not particularly interested; they tended to regard Nicorette with disfavor since it was considered to contain an addictive poison.

Nicorette was formed into a separate company 1979 headed by Lennart Sorelius, former in charge of exports at Leo and a solid supporter of Nicorette. While corporate strategy was focused on prescription pharmaceuticals, Nicorette achieved very high sales figures by the mid-1980's. Leo was primarily a Swedish company, and sales on international markets were moderate. The company had a limited number of sales subsidiaries or representatives of its own on international markets. Nicorette was therefore licensed out on the European market and later in the US. It was introduced in England in 1981 and the US in 1984. Its success was modest until sales rose sharply with international expansion, particularly after Nicorette was launched in the US in 1984. Support within the company increased as sales grew. Subsequently the product was developed further with a variety of different strengths and flavors.

The Nicorette team urged the company to approve more marketing investments as Nicorette was to be launched in new markets and as sales increased, but these investments were questioned. There were doubts about whether it was reasonable for Leo to make this kind of marketing investments. The company emphasized traditional pharmaceutical drugs and did not have extensive international sales and distribution capabilities, especially not for OTC products. Distribution and marketing in foreign countries were provided via international distribution agreements

and Leo kept the right to manufacture. In terms of corporate strategy Leo was concerned with the consolidation of the Swedish pharmaceutical industry and the following integration processes. Leo was bought by Sonesson 1983 and then Ferrosan bought Sonesson/Leo in 1984. Nicorette and OTC products did not play any particular role in these mergers and acquisitions.

7.5.2 Consolidation of the Swedish Pharmaceutical Industry

When Pharmacia acquired Leo in 1986, Nicorette was Leo's largest-selling product. It was still, however, questionable whether it was an appropriate one for a pharmaceutical company, and it was disliked by many at Pharmacia. There were no particular synergies in the acquisition for Nicorette, but after discussions between the two companies, it was decided to retain the product within the group.

The product had vast potential, since markets outside Europe and the USA remained to be penetrated and Nicorette was the only smoking-cessation product on the world market. Internationalization continued in the late 1980's.

The Nicorette unit felt that there were many similarities between consumer markets and the smoking-cessation market, as well as OTC markets in general. Because the Nicorette patent would expire in the mid-1990's, it was important to build a strong market and brand position prior to that time and consequently to switch Nicorette into an OTC product - it was still a prescription product in most markets in the late 1980's.

Around the same time competitors had started to enter the smoking-cessation market, but Nicorette was ahead of them and had the largest market share. However, the product required increasingly large market investments for distribution and advertising, a source of continuing friction with other therapeutical areas in the new Pharmacia/Leo constellation.

Procordia, a Swedish state-owned conglomerate, bought Pharmacia in 1989 and merged it with Procordia's own pharmaceutical company, Kabi Vitrum. Nicorette did not play any role in the acquisition, other than accounting for a substantial part of Pharmacia's sales. Procordia's Health care area was divided into biosystems (Pharmacia Biosystems) and pharmaceuticals (Kabi Pharmacia); the latter unit was

headed by Jan Ekberg from Kabi Vitrum. Nicorette was regarded as an oddity in the therapeutic sector and was placed in a separate business unit, headed by Jörgen Johnsson, who had been in charge of Leo's international sales. The product continued to be questioned by others in therapeutics.

There were ongoing discussions about organizational and strategic changes in the new Pharmacia/Leo and Kabi constellation. Through the merger the company had acquired a range of other OTC products, besides Nicorette, which were gathered in a Self Care unit. Like Nicorette, they had a lower status than the prescription drugs. It was discussed whether Nicorette fitted the new pharmaceutical constellation, and various analyses were done. There were several critical factors to consider: (1) the Nicorette patents would expire during 1992-1994, and the product would then be exposed to generic competition; (2) other pharmaceutical companies (Ciba-Geigy, Marion Merrel Dow and Warner Lambert) had started R&D activities in the field and were about to enter the market; and (3) the reclassification of smoking-cessation products from prescription to non-prescription pharmaceuticals (Urde, 1997).

The product area survived the merger with Kabi. A contributing factor was the mere size of the product; it was Pharmacia's largest at the retail level (approx. 1 Bill. SEK in sales). The Nicorette unit continued and accelerated their efforts to expand the product range and increase market penetration. As Nicorette became an OTC product in more and more markets, sales increased considerably.

New Nicorette products, including various dosage forms (patch, spray, inhaler, etc.), were also developed and marketed. Nicorette sales rose by 28% in 1991, 78% in 1992, and in the first half of 1993 sales were up 86% compared to the prior year since distribution right were bought back. The launch of the skin patch increased the world market for smoking-cessation products to approximately 8,300MSEK in 1992 at the retail level. The largest markets in 1992 were North America, Scandinavia, the UK and Australia.

The Nicorette business unit wanted to build further on the basis of their OTC vision, which focused on the tendencies of regulatory authorities to reclassify prescription drugs to OTC products, increased health consciousness of individuals, and a greater focus on branding in the pharmaceutical and OTC markets. At the same time, a new President, Lars Backsell, had been appointed for the Self Care business

unit. The Self Care product portfolio was slimmed, skin-care products were divested and manufacturing was trimmed. The unit was the market leader in non-prescription drugs in Sweden with a 45% market share. It had 50% of the Swedish market for analgesics, with Magnecyl, Treo and Ipren as the main brands. The Nicorette and Self Care unit, both based on OTC products, had similar visions for the future of the OTC market and the same interests. However, they also encountered similar resistance internally. They had to fight not only for smoking-cessation, but for OTC products and the emerging idea of more OTC switches, obtaining OTC status for perhaps other prescription products.

7.5.3 International Acquisitions and Continued Success for Nicorette.

Kabi Pharmacia acquired a majority interest in the Italian pharmaceutical company Pierrel in 1991. Nicorette sales increased as distribution rights were repurchased and new products were launched, but more competitors entered the market as well. Jan Ekberg became the new CEO and President of the Procordia conglomerate in 1992, and Håkan Åström became the new President of Kabi Pharmacia. Around the same time competitors were entering the smoking-cessation market in ever larger numbers. It was questionable whether Nicorette would be able to hold its top position against global pharmaceutical companies such as Ciba Geigy with its Nicotinell brand. Several companies were about to enter the market with patch products, and there were discussions about a possible divestment.

Sales of Nicorette soared as it increasingly became an OTC product. Its success attracted the interest of competitors in the pharmaceutical industry, especially those with a particular focus on OTC products. There was thus an opportunity to sell, but after a series of strategic analyses and discussions it was decided to keep Nicorette. In addition, the Nicorette unit was allowed to buy back distribution rights, which had been licensed out on most international markets. Nicorette was now recognized as a legitimate part of Pharmacia, but it was still far from the centre of corporate strategy, which at that time focused primarily on "functional food," involving an integration of Procordia's food and pharmaceutical businesses.

The consolidation of the pharmaceutical market continued. Pharmacia acquired the Italian pharmaceutical company Farmitalia Carlo Erba (FICE) in 1993, but as earlier the focus was not on OTC products, but exclusively on complementing the portfolio of prescription drugs. However, Carlo Erba - the OTC section of FICE - gave the Pharmacia OTC business critical mass. As a result, there were intensified discussions about creating a joint OTC unit at Pharmacia, and in 1993 the OTC units, Nicorette and Self Care, managed to gain support for a unified OTC business area with Jörgen Johnsson as President and Lars Backsell became marketing manager. When Procordia was split and Pharmacia became a separate company, all OTC sections - Nicorette, Self Care and Carlo Erba - were transferred to a unified consumer health care business area, Consumer Pharma. After the split Jan Ekberg once again became President of Pharmacia.

The integration of the different OTC units started in 1993 and was finalized in 1994. The new OTC constellation was one of Europe's largest. The emphasis was on branded OTC products and on OTC switching, obtaining OTC status for prescription pharmaceuticals.

When the Nicorette chewing gum was introduced on the Japanese market in 1994, Nicorette was sold in more than 50 countries worldwide. Several competitors had entered the market, particularly in patches, but many of them overestimated demand and withdrew. Marketing efforts were increasingly focused on end consumers, since a growing proportion of sales were on the OTC market. Nicorette had OTC status in all European countries except France and in the US by 1994.

7.5.4 Entering the US and Focusing on Consumer Health care

As the consolidation process continued, Pharmacia merged with Upjohn of the US in the fall of 1995. Dr. John Zabriskie became CEO and President, and Jan Ekberg, Chairman of the Board.

The OTC portfolio increased after the Pharmacia & Upjohn merger in 1995. The OTC sections, or Consumer Pharma, had to struggle to explain how OTC markets worked. It was clear that the OTC products were not considered core. On the other hand, they were not to be divested. The OTC sections of Pharmacia & Upjohn were

formed into a separate business unit, Consumer Healthcare, headed by Jörgen Johnsson. The most important product of Upjohn was the hair-regrowth treatment for hereditary hair loss, Rogaine. The two major consumer health care brands, Nicorette and Rogaine, were given a considerable stimulus by the merger. The great success of Nicorette continued, and it had gained a 50% world market share by 1995.

The business policy of Consumer Healthcare was to switch products to the OTC markets. Rogaine (Regaine outside the US) was launched as an OTC product in the US and in selected European markets in 1996. Nicorette continued to be marketed and released as an OTC product in an increasing number of countries. Life-cycle management, with the reclassification of prescription drugs as OTC products as patents expired, was an important strategic focus in consumer health care. The introduction of new products continued as well. A Nicorette inhaler was launched as another delivery system for nicotine. Subsequently the emphasis on switching from prescription to OTC, or "life cycle management," became a more central part of Pharmacia & Upjohn's overall corporate strategy. It was acknowledged among prior skeptics that Consumer Healthcare and the OTC products had a more strategic role to play. Corporate management recognized that consumer health care products and branded pharmaceutical products were not only a potential course for the company to follow, but a prerequisite for its further development (Urde, 1997).

The new President and CEO of Pharmacia & Upjohn, Dr. John Zabriskie, resigned in 1996, and the company went through turmoil since the merger process had failed. Jan Ekberg stepped in temporarily while a new CEO was recruited. Fred Hassan, prior from American Home Products, was appointed as new CEO and President and led a major turnaround in 1997 and 1998 following the problems with the merger.

The new strategy was to focus on core activities, and several sections were divested, such as Nutrition. Consumer Healthcare, however, was considered core business by this time. Corporate management shared Consumer Healthcare's view regarding the importance of prescription to OTC switching and life-cycle management in the pharmaceutical industry. Nicorette sales rose by \$45M to \$213M (1700MSEK) in 1998. Consumer Healthcare accounted for more than 10% of total sales. Another

smoking-cessation dosage form was launched the same year - a pastille known as the Nicorette Microtab - and new markets in Asia were approached, among them China.

7.6 AGA in the Industrial Gas Industry – The Creation of an Eastern European Business

7.6.1 AGA AB

AGA is a Swedish producer of industrial gases. It is the fifth largest industrial gas company in the world, with manufacturing and distribution in some 40 countries in Europe, Latin America and the US. Aktiebolag Gasaccumulator, AGA,¹⁷⁴ was established in 1904. AGA initially focused on acetylene gas and its use in lighthouses. The scientist Gustaf Dalén, who won the Nobel Prize in physics in 1912 for his inventions relating to lighthouses, was one of the founders and AGA's president between 1909 and 1937.

Dalén's lighthouse inventions and the company's continuous innovations in lighthouse technology gave rise to an early internationalisation. One of the first international projects was to supply lighthouses for the Panama Canal 1912 (AGA, 1954). AGA quickly expanded into various European markets and Latin America. The company enlarged its gas business and manufactured various industrial gases after the First World War. AGA was an engineer- and innovation-driven company which entered a range of different product areas. Subsequently it grew into a conglomerate in a number of different businesses. The company manufactured welding machines, cinema projectors, radio and TV equipment, stoves, radiators and other more or less unrelated products, besides industrial gases, in the 1950's and 1960's. AGA began to refocus on the gas business during the 1970's and 1980's and started to divest some of its other areas of business. Since then the emphasis has been on industrial and medical gases and to an increasing extent on specialty gases.

First, however, in the late 1970's and early 1980's, AGA acquired two Swedish companies; it then divested them in the mid-1990's. They were Uddeholms AB, a steel and electric-power company, and Frigoscandia, a commercial cold storage,

¹⁷⁴ The company was named AGA, but not until 1964 did it become the company's official name.

deep freezer manufacturer and transport company. Finally, in 1996, AGA was concentrating solely on its original core product, industrial gases.

The company has made substantial investments in various markets during the last few years. International expansion has mainly been through acquisitions, but also via green-field investments, especially in Eastern Europe.

AGA's principal products are oxygen, nitrogen and argon, accounting for approximately 50% of sales. Other products are acetylene, propane, hydrogen, carbon dioxide, laughing gas and a range of other gases, including specialty gases (AGA, 1998). The company is a leading supplier of cylindered gases and has a total world market share of about 6%. AGA has 10,200 employees and sales of 15,088M SEK (\$1,900M), of which around 85% are to customers outside Sweden (AGA, 1998). The principal markets are the manufacturing industry (metal-working, mechanics, welding etc.), process industries (metallurgy, food, chemical, etc.) and the health industry (hospitals, laboratories etc.). Appendix F provides further company data.

During the tenure of former President Marcus Storch, AGA was organized geographically by region: Northern Europe (31% of sales), Continental Europe and the US (49%) and Latin America (20%) (AGA, 1995). A new president was appointed in 1997, Lennart Selander, and a new organization was implemented. The company was reorganized with a market focus on three business areas: Manufacturing Industry (55% of sales), Process Industry (32%) and Health care (13%) (AGA, 1996). These business areas have a global responsibility for sales, business development, product development and profitability. Operations are decentralized; the various subsidiaries in each market have their own production and marketing. Headquarters are situated in Lidingö, Stockholm with Control, Finance, Legal and R&D staff functions and other support services. Subsidiaries are controlled via the budget process and various key numbers. Major investments and development projects must be approved by headquarters. In addition, there is at least one manager from headquarters on the board of each subsidiary.

7.6.2 The Industrial Gas Industry

The industrial gas industry is directly dependent on general industrial production and the industrial infrastructure. The total world market is around \$31 billion, and the largest markets are Europe, North America and Japan. On average market growth is 1.5 to 2 times the growth in a country's industrial production. Industrial gases are used in a wide variety of industries, with the largest volumes utilised in metallurgical and chemical manufacturing processes.

Concentration is rather high in the world gas industry. It is basically an oligopoly in which the eight largest producers account for more than 80% of world sales. The companies with the greatest market shares are French Air Liquide (17%), British BOC (15%) and American Praxair (15%), followed by American Air Products (9%), with a slightly larger share than AGA (6%) (all figures 1998). Close behind AGA in terms of market share follow Japanese Nippon Sanso and Linde and Messer Griesheim of Germany.

The major competitors have been expanding geographically and in terms of capacity development during the last few years. Consolidation is continuing as the larger companies acquire smaller ones. (Note: Indications of possible further consolidation through mergers among the largest actors¹⁷⁵ were substantiated in 1999, when Linde of Germany acquired a majority interest in AGA.)

Competition is relatively fierce and price-focused, since industrial gases are fairly standardized products. Companies produce and offer the same kinds of gases. However, there is product development in terms of new gas mixes and distribution forms. There is an emphasis on production efficiency in order to lower costs and keep up with price reductions. Enhancing customer service is another competitive weapon; being close to customers is very important. A growth strategy for the industrial gas companies is to find new areas of application for gases.

The industrial gas industry is essentially a local business. It is normally not profitable to transport gases more than forty to fifty metric miles from a gas plant. There are a wide variety of distribution forms. The method of distribution depends on the size of the customer. Larger customers are supplied through tonnage delivery via

¹⁷⁵ During 1998 and 1999 there was speculation about a merger between Swedish AGA and British BOC (Affärsvärlden, no. 13, March 25, 1998, Dagens Nyheter 980328).

pipelines, based on contracts running for 10-15 years. Gases are usually distributed to medium-sized customers in liquid form with trucks. For these and smaller customers gases can also be supplied through on-site supply; the gases are then produced at the customer's premises. Contracts for these distribution forms run for around 3-5 years. Finally, gases can be delivered in cylinders to small and medium-sized customers. This method of supply requires an extensive distribution network and a high service level.

7.6.3 An Emerging Industrial Gas Industry in Eastern Europe

The political changes and subsequent "revolutions" in Eastern Europe at the end of the 1980's and the beginning of the 1990's opened up the economies behind the Iron Curtain. With a total population of more than 100 M - including the USSR around 300 M - and a high demand for goods of Western quality, Eastern Europe appeared to offer many business leaders in the West a very attractive opportunity to enter.

When communist regimes came into power after the Second World War, international gas businesses, like other businesses, were nationalised. National industrial gas monopolies were established in the socialist Eastern European countries. Connections with the international industrial gas industry were largely absent in the years to follow. In the early 1980's some openings were made, and a couple of Western gas companies started to export to their counterparts in Eastern Europe. However, these exports were only in small quantities and of limited importance. A range of factors hindered Western multinationals from entering Eastern Europe prior to 1989/1990. Among the factors impeding Western investments were the inflexibility of the socialistic economic and administrative structures, and the absence of trade regulations, terms for payments and convertible currencies. Moreover, general political uncertainty and lack of trust between partners limited the influence of the early economic reforms (prior to 1989) on East-West trade and investments (Rutihinda, 1996).

The socialist countries of Eastern Europe started to liberate their economies in response to the political and economic reforms in the USSR in the mid-1980's¹⁷⁶. Before 1980 there had only been 43 joint ventures with Western equity partnerships in the Eastern European countries (Nigh et al., 1990). These joint ventures were in small- and medium-sized companies. Later, during the "perestroika" restructuring, the Soviet Union introduced legislation which admitted and even encouraged foreign participation in the economy. In January, 1987, the Presidium of the USSR Supreme Soviet issued the "Joint Venture Decree," which permitted equity joint ventures between Soviet and foreign partners (Roster, 1991). There followed an explosion in the number of joint ventures and other operations with foreign ownership. Joint ventures in many different areas were set up, from Indian cuisine restaurants to production of mobile cranes (Sherr, 1988).

Inspired by the "perestroika" in the Soviet Union, other Eastern European countries initiated deregulation similar to the Soviet one in terms of foreign ownership, if it had not been accomplished earlier. Industrial gas companies, too, started to form joint ventures with their Eastern European counterparts. The number of joint ventures with foreign partners in the socialist countries of Eastern Europe had increased to 831 by late 1987. Two years later over 1000 joint ventures had been established in the USSR alone (Nigh et al., 1990).

When the Berlin wall came down in 1989, that event signified the definite opening of the market, even if there had previously been a boom in terms of joint venture activities. Many restrictions regarding foreign companies, their investments and activities in general, were eliminated during and after that crucial year. This led to a surge in Western operations of various kinds. Western companies entered not only through joint ventures, but also via acquisitions and green-field investments.

In the industrial gas industry, multinational companies quickly started to establish relationships with the Eastern European industrial gas monopolies and initiated a bidding process. There seemed to be boundless opportunities for Western companies. However, soon Western companies encountered problems and

¹⁷⁶ The reform process in USSR was led by Mikhail Gorbachev, who assumed power in 1985. At the time the Soviet economy and the socialist model were faring very poorly, and there was a growing pressure for democratic reforms. The fundamental change in the USSR involved reforms of "glasnost", or transparency, and "perestroika", or restructuring.

experienced the political and economical uncertainty in these countries. For example, early in 1993 there were 4,424 joint ventures registered in Russia; however, only 20% of these were active (Fey, 1995, p. 407).

7.6.3.1 The Industrial Gas Industry in Eastern Europe – External Context

The complete opening of the Eastern European economies after the fundamental political changes during 1989-90 started a race to enter these markets. The Western industrial gas companies faced tremendous opportunities in terms of a range of different industrial customers and millions of new consumers, inexpensive labor and natural resources. The first to act could gain important benefits, linking up with the best partners and people and being able to market their products at an early stage.

Paradoxically, however, the changes, including the economic reforms, increased the uncertainty for Western industrial gas operators and other investors. First, the whole government and service infrastructure more or less broke down. The consequence was uncertainty concerning who had the authority regarding various permits, acquisitions, taxes, etc. Another result was that the service infrastructure - telecommunications, postal services, etc. - only functioned intermittently. The underdeveloped finance and banking sector also contributed to the confusion faced by the Western industrial gas investors. Second, determining and predicting the quantity and quality of market demand became impossible once the economies were opened and the state gas monopolies were ended. Finally, the competitive situation was unclear with gas monopolies dismantled in various ways, new domestic actors entering the industry and a range of multinational corporations seeking the former state owned gas monopolies, their former employees and gas-related companies. All these factors, together with the general uncertainty regarding the political and economical consequences of the reforms, resulted in a turbulent and uncertain business environment for the industrial gas industry. The formerly regulated and bureaucratic Eastern European economies had largely been replaced by chaos. However, the degree to which the various factors influenced the different Eastern European economies varied and, consequently, so did the complexity of the business environment.

The Western companies present in Eastern Europe operated in a highly bureaucratic and unwieldy business environment before 1989. Rules and regulations were far from clear, and government decisions took months. Nevertheless, some lines of communication were open, and although bureaucratic, the environments were stable and to some degree predictable.

The transition period, in contrast, was characterized by widespread disorder. Former contacts in governmental bureaucracies disappeared. Decisions were decentralized, but it was unclear who had the authority. Western industrial gas companies and Western companies in general did not know to whom they could turn. Important infrastructural state monopolies were broken up. Often they also broke down. Earlier they had been highly incompetent and inefficient, but at least, normally, they were functioning. The former bureaucracies were replaced by confusion and unpredictability (Nigh et al., 1990). When the legislative and political systems, which focused mainly on assuring that the Communist Parties would remain in power, were reformed after 1989-90, the change came all at once. Hence, during the early transition period the reform policies were equivocal and vague. There were no distinct privatization plans or policies for the industrial gas industry.

The new legislative and political systems were not only difficult to penetrate, but they were also highly unstable. Miscellaneous regulations and new reforms were continuously updated and changed. Even though the constant reforms were usually positive, deregulating the economies further, they produced a highly volatile environment. When power in central and local governments shifted, political instability increased further and heightened the confusion, especially since more leftist-oriented movements assumed control in some areas. In these cases political risks in terms of bureaucracy and regulation - and even nationalization - had to be considered, once again, by the multinational gas industry (Rutihinda, 1996).

Business and politics were intertwined. Politically influential individuals were sometimes directly involved as advisors and directors of national industrial gas companies. Moreover, the infrastructure of government agencies, courts and other legal institutions to enforce various regulations and laws was insufficient. There was no guarantee that domestic or other actors would abide by the rules. This environment was a hothouse for organized crime. In summary, the legacy of the centrally planned

economies in terms of complex bureaucracies and weak infrastructures, together with continuous reforms and changing regulations, was a source of bewilderment and numerous difficulties for any potential entrant into the industrial gas market of Eastern Europe.

Although the industrial gas companies faced enormous opportunities in terms of demand in the Eastern European markets, they encountered tremendous obstacles in evaluating that demand. First, it was highly unclear exactly who the potential industrial gas customers were, since they had been linked to the state-owned gas monopolies which were being dismantled. Second, once identified, the clientele was somewhat inexperienced and unsophisticated in doing business on market terms. Clients did not completely comprehend market prices or various quality conditions of industrial gases. The general economic slowdown which afflicted domestic companies in the early transition period also influenced the gas customers' way of doing business. Third, as a consequence of the above, forecasts regarding the quality and quantity of market demand were unrealizable - a legacy of the centrally planned economies. Accordingly, a major problem was to determine market demand and its future development.

Market conditions were completely different from those in the developed Western economies, and they also differed from markets in developing countries. It was clear that the existing industrial gas monopolies were out of date with their inferior technology and inadequate distribution methods. Nevertheless, it was difficult to calculate to what degree these factors had influenced the "market." Production and capacity figures were highly unreliable because of losses of various kinds along the production and distribution chain. In addition, the fact that industrial gases, like other products, had been allotted to end users, rather than marketed to them, naturally complicated any forecasts even more. Industry heuristics, such as growth equals "1.5 to 2 times the growth in industrial production," or "annual consumption is approximately \$15 per capita," did not apply.

The Eastern European industrial gas markets were served by very few suppliers during the communist era, and it was clear that the use of industrial gases would increase once the markets had been deregulated. The question was when the market would take off and to what degree. Would it take one year, two, five or ten

years before the emerging private sector expanded and demand for industrial gases started to pick up? Industrial output fell drastically after the fall of the communist regimes around 1989-90. The cumulative fall in GDP in the Eastern European countries between 1989 and 1993 was around 30% (Rutihinda, 1996). Naturally this reduction in GDP decreased the demand for industrial commodities considerably and in the end the demand for industrial gases.

When the market finally started to grow, the industrial gas companies faced other problems. First and foremost, the new entrants were squeezed by low prices. The private sector developed slowly and clients were not prepared to pay the prices demanded by the multinational industrial gas firms. At times the multinationals were also regarded with skepticism by local businesses, which associated rising prices in general with the expansion of foreign firms. In addition, incumbent industrial gas competitors benefited from artificially low input prices reminiscent of the communist era (Rutihinda, 1996). Another issue was to determine the appropriate distribution forms. Normally there would be a period of transition from cylinder to truck and finally to on-site and pipeline distribution. As it turned out, this pattern was not always relevant.

7.6.3.1.1 The Transformation of the Industrial Gas Industry and Variations among the Eastern European Markets

The national business environments for industrial gases were remarkably dynamic and turbulent during the transition period, and not only because of unclear and continuously changing government policies and the unpredictability of market demand. The competitive situation in itself was ambiguous as well. The former state-owned gas monopolies were dismantled quite soon after the "revolutions" of 1988-90. During the years that initially followed, "spontaneous privatization's" took place. Investors, primarily foreign, located potential investment targets and placed bids on individual companies. There was something of a race among Western gas companies to acquire the whole or at least parts of the former industrial gas monopolies and related firms. As a natural consequence, acquisition prices increased, forcing some actors out of the bidding process.

Later privatizations became more formalized and were supervised by special government bodies. One example is the State Property Agency, SPA, which was established in Hungary in 1990 (Middlehurst, 1996). Under these stricter and more regulated conditions -although the loopholes were considerable - separate "programs" of privatization were set up. However, they meant higher prices and imposed an insufficient regulatory framework. This situation increased the risk from the acquirer's point of view. The programs frequently brought privatizations to a halt, since they often included whole groups of companies for sale. For years companies in these programs remained under majority state ownership. Hence, competition was severely constrained even after actions against monopoly were taken by Eastern European governments. In the Czech Republic, Hungary and Poland, for example, various markets were still dominated by a single firm in 1991 (Kostecki, 1996). The picture were further complicated by the fact that important political actors were directly involved in the activities of the industrial gas companies.¹⁷⁷

The industrial gas industries in Eastern Europe went through continuous changes during the first transitional years. A number of diverse actors were entering and exiting the industries. Besides the remaining wholly or partly state-owned gas companies and their related operations, there were new domestic competitors. These were either remnants of the old monopolies or former employees who had set up their own operations. In addition to these domestic actors, several of the major multinational industrial gas companies showed great interest in the emerging markets. They competed to negotiate the most favorable cooperative arrangements and terms of doing business with the former gas monopolies. However, their degree of interest and success varied. The German companies, Messer Griesheim and Linde, were the most aggressive and acquired many old state monopolies. Air Liquide of France entered Eastern Europe but later reduced its commitments there in favour of Asian markets (Rutihinda, 1996).

Initially, competition was based primarily on price. Incumbent monopolies, or what was left of monopolies, were able to offer low prices; they did not have to invest in any facilities, and their input prices were often based on the old regulated system

¹⁷⁷ One illustration of the peculiar and somewhat incomprehensible mix between politics and business is the fact that the Serb leader Slobodan Milosevic of the former Yugoslavia has a history as a director

and thus unrealistically low. Other problems faced by Western companies in the transition economies were the lack of qualified personnel in certain areas and an insufficient supply of employees who were able to communicate in English.

As discussed earlier, it is somewhat misleading to treat the Eastern European countries during the transition period as a homogenous group. The countries differed in many respects both politically and economically and, of course, culturally. Their economic policies have differed historically even though all these countries operated under a traditional centrally planned economic system. The slow transition to a market economy started earlier in some countries than in others. Minor economic reforms were initiated sooner in countries which had been relatively advanced and where capitalism had played a more important role before the communist takeover.

Czechoslovakia, Hungary, East Germany and Poland were already dissatisfied with the centrally planned economic systems in the 1950's and 1960's and made some attempts at modernization early on (Rutihinda, 1996). However, these reforms did not have any impact until Hungary started an economic reform process with the introduction of the "New Economic Mechanism", NEM, in 1968. It involved a new system for economic direction and management. "Working associations" were allowed, with contributions from private entrepreneurs. Four years later the Minister of Finance announced a decree permitting the formation of joint ventures with foreign partners (Calming and Jakabffy, 1993).

To some degree the "market socialism" of Hungary managed to avoid some of the more basic pitfalls encountered by other Eastern European economies. However, despite the continuous process of reform, the measures taken did not have any substantial impact on Hungarian-Western economic relationships. It was not until the late 1970's and early 1980's that Hungarian-Western joint ventures increased after they had been further reformed. There were around 50 joint ventures with foreign ownership in the mid-1980's in Hungary. During the more fundamental economic and political transformation of the late 1980's, the number of joint ventures formed in Hungary skyrocketed to 227 in 1988, 1,350 in 1989 and 11,250 in 1991 (Calming and Jakabffy, 1993).

of the industrial gas monopoly company in Belgrade.

Economic reforms were insignificant in Czechoslovakia before 1989 compared with Hungary. There were only a handful of joint ventures with foreign participation and no company was majority-owned by Western firms, although several foreign companies were represented in the country (Drábek, 1996). Numerous liberalization measures for foreign firms were enacted after 1989, when the old regime was brought down. The post-communist regime approved a radical reform program in 1990. Market access was significantly improved, and the former "national treatment" principle was substantially extended to foreign firms (Drábek, 1996). In 1992 there were close to 6000 foreign-related joint ventures in Czechoslovakia (Meyer, 1996, p.53).

Poland and, to a lesser extent, East Germany, also participated in various so called Industrial Cooperation Agreements with Western companies prior to 1989. These agreements between communist institutions and monopolies and Western multinational companies had gradually grown in number after the early 1970's, but were still very limited. Poland was very early in challenging communism and held its first open elections in 1988. After the fall of the Berlin wall in 1989, the country rapidly adopted a rigorous reform program for a quick transition to a market economy. East Germany did the same in conjunction with the unification with West Germany and thereafter applied the same investment conditions as in the West. Later the Czech Republic, Hungary and Poland opened their stock exchanges to foreign investors, and by 1992 foreign direct investments were only moderately regulated in these countries (Meyer, 1996, p. 53-54). In sum, the transformation to a market economy has been easier in Czechoslovakia, Hungary, Poland and East Germany compared to other Eastern European countries. However, the transition has not been spared from major difficulties in any of these emerging markets.

7.6.3.2 AGA's History in Eastern Europe – Internal Context

AGA has a long history in Eastern Europe. The company entered the region during its early internationalization in the beginning of the century,¹⁷⁸ starting in 1915 with

¹⁷⁸ A manager at headquarters in Stockholm, Nils Westerberg, was specially assigned to focus on establishments in Central- and Eastern Europe before the Second World War (AGA, 1954, p. 49).

Hungary, where AGA built light houses along the river Danube and an acetylene plant to supply them (Calming and Jakabffy, 1993). The following year marked AGA's establishment in Austria. Subsequently the company expanded into most countries in Eastern Europe and had eight subsidiaries in the region just before the second World War. The region then accounted for close to a third of AGA's total gas operations.

After the war AGA's gas businesses in Eastern Europe were nationalized, beginning with the Hungarian subsidiary in 1948. AGA's assets in all other Eastern European countries were also confiscated by the communist regimes there. A long period of inactivity in Eastern Europe followed for AGA after it had been forced out.

AGA's welding business started indirect export activities on a small scale in the 1970's in Hungary. Welding equipment was sold via so called Foreign Trade Organisations, FTO's, subordinate to the Hungary Ministry of Finance. Later a license agreement on cutting torches was signed with a Hungarian state-owned company, Automatika Muvek, AM. In the mid-1980's AGA's business with AM was transferred to a joint venture -named Gas Control Equipment - with ESAB, a Swedish welding equipment company. AGA did not open a local representative office at this time, although the company was allowed to do so. Instead AM later became AGA's local sales representative for cutting and welding products around 1979-80.

AGA also started to export gas, primarily liquid gases, at this time to some Eastern European countries. Indirect exports were made via their Austrian subsidiary, AGA Werke Wien, via the FTO's to Hungary and also to Czechoslovakia and former Yugoslavia. However, activities were still limited, and two or three employees at AGA Werke Wien handled all sales to these markets. AGA did not further increase its involvement in Hungary or other Eastern European countries during the 1980's (Calming and Jakabffy, 1993).

7. 7 AGA's Entry into the Emerging Eastern European Markets

7.7.1 The First Steps in Eastern Europe: East Germany and Hungary

AGA's German competitors, Messer Griesheim and Linde, started to penetrate the East German market quite soon after the wall in Berlin had been torn down. AGA's subsidiary in West Berlin noticed the activities of these competitors and initiated some

local studies of its own. Lars Källsäter, Managing Director of the Swedish subsidiary became involved around this time. He was to study developments in Eastern Europe and was later joined in this task by another manager, Lars Timner.

In exploring these dynamic and turbulent environments, the "Eastern Europe team" of Källsäter and Timner encountered completely different business practices and cultures, weak and underdeveloped infrastructural bases and a generally low technological level. Nevertheless, they saw very promising opportunities.

Both the team and the West German subsidiary wanted to enter the East German market. However, the German competitors moved faster than AGA and had already established cooperative arrangements and acquired parts of the disbanded gas monopoly, which included AGA's former plants. AGA did not even become involved in the bidding process.

Other alternatives were then investigated by the team, and some minor gas and gas-related acquisition candidates were later identified. These acquisitions were accepted by headquarters. The venture into Eastern Germany was strongly supported by the Managing Director of the West German subsidiary, Lennart Selander, and the investments, primarily green-field, continued to be managed from there.

The Eastern Europe team traveled around to the various markets. They spoke with people at the gas monopolies and other actors in the industry, learning about the conditions for privatization, the status of plants, the industry structures and other relevant information. They wanted to move fast and preferably via acquisitions in order to gain large market shares quickly at reasonable prices. The team also recruited employees and provided support in the start-up of new subsidiaries. Existing AGA subsidiaries in nearby Western European countries also provided valuable help in this regard.

One of the first Eastern markets, besides East Germany, was Hungary. Before the fall of the Berlin wall, some local AGA initiatives were taken in Hungary to cooperate with gas companies. Hungary had started to open up some sectors of its economy in the late 1980's. There were negotiations about forming a joint venture with a steel mill in 1988. However, AGA was not offered a majority share and turned the proposal down (Calming, Jakobffy, 1993).

Between 1988 and 1990, AGA made several other attempts to find a gas company to acquire or a partner with whom to cooperate. Late in 1989 and early in 1990, a local initiative was taken by a native Hungarian manager employed at AGA Werke Wien to set up a representative office in Hungary (Calming and Jakabffy, 1993). The representative office took over the responsibility for all of AGA's products from Hungarian state-owned Automatika Muvek, AM. Activities included sales and marketing of gases, cryo tanks and welding equipment. The manager¹⁷⁹ who had been responsible for this area at AM became principal. The main difference concerning gas operations was a change of mode from indirect export, via Hungarian state controlled units, to direct export.

The Eastern Europe team participated in studying the Hungarian market. During the early phase of Hungarian privatizations, AGA had the opportunity to acquire part of the Hungarian industrial gas company. However, once more AGA's board turned the proposal down because they did not accept the conditions. Again, a major reason for the board's decision was that AGA would not have been able to acquire the majority of the shares (Calming and Jakabffy, 1993). The position of the board and its Executive Chairman, Sven Ågrup, was to invest primarily in wholly owned subsidiaries for control purposes. The Hungarian body for privatization, the State Property Agency, SPA, continued to seek partners for the joint ventures declined by AGA. Later the conditions for both joint ventures were accepted by AGA's German competitors (Calming and Jakabffy, 1993; Rutihinda, 1996).

Since AGA had not been able to find a local gas company to acquire on acceptable conditions, or any other suitable partnerships, the company decided to make at least a green-field investment in Hungary. The wholly owned subsidiary AGA Gáz Kft was established via Austria, with the assistance of the Eastern Europe team, and registered in September, 1990. The subsidiary's activities were limited to marketing and sales. Because of safety considerations, Hungarian authorities would not let AGA purchase land for a gas production plant. In 1991, however, AGA Gáz managed to buy land from the state-owned Medicor group, as well as its business for manufacturing and installation of medical gas equipment, Medicor Orvosi Gáz Szervisz, OGS.

¹⁷⁹ The Manager was Tibor Szucs, recruited from Automatika Muvek, AM.

Gas-filling operations started late in 1991. Gas, primarily acetylene, was bought from AGA Werke Wien. Two of AGA's main competitors, Messer Griesheim and Linde of Germany, had escalated their commitments in Hungary, thus increasing competition and pressure on prices, and in the beginning the business was unprofitable for AGA (Rutihinda, 1996). Initially AGA thought that cylinder distribution would dominate in Hungary for a long time, but distribution of liquid gases became relevant much earlier than anticipated.

7.7.2 Continued Entry into Eastern Europe: Czechoslovakia - the Czech and Slovak Republics

The Eastern Europe team, Källsäter and Timner, continued their exploration of the Eastern European markets. However, there were many complicating factors. The Eastern European business environments were diverse and changing in political, economical, social and legal terms. On the one hand, the general structure of the gas industry was fairly easy to analyze right after the fall of the wall; most often only one monopoly company, sometimes divided into various sub-units, controlled the gas market in each country. On the other hand, changes were taking place very quickly. Monopoly companies were being divided, privatizations were under way, former employees were starting their own businesses, and other foreign competitors were moving in. Moreover, technical standards and procedures were often very different in the Eastern European gas industry. Another complicating factor was that the continuous changes in the political, economical and industrial systems had different patterns in each Eastern European country. In addition, the Eastern Europe team felt very pressed for time, since the main competitors, the Germans, already had managed to precede them in Eastern Germany and Hungary. The team saw a wealth of opportunities and wanted to act quickly. However, corporate management was more hesitant.

One of the first markets to be explored, besides East Germany and Hungary, was Czechoslovakia - from 1993 on, the Czech and Slovak Republics- where Källsäter started to investigate the industrial gas industry structure. However, AGA's German competitors, Messer Griesheim and Linde, had acted decisively and established relations with the former gas monopoly, part of which was AGA's former

gas company. Subsequently, Linde acquired the gas company in the Czech Republic, and Messer Griesheim, the one in Slovakia.

AGA's corporate management was surprised by the energy and speed with which the Germans had entered Czechoslovakia and Eastern Europe in general. In principle, there were no gas companies left for AGA to buy in Czechoslovakia. Instead, AGA in 1991 once again entered through green-field investments (Rutihinda, 1996). A filling station was established in the Czech Republic, and a network of depots was gradually set up. Lars Källsäter of the Eastern Europe team, together with local recruits, were involved in the establishment, which was sponsored by the subsidiary in Austria. As with prior ventures there was no particular involvement by corporate management. The AGA board was not involved at all. Later the subsidiary bought a share of an air-gas production plant in a joint venture with a large Czechoslovakian steel group, Vitkovice.

Corporate management, primarily President Marcus Storch, Executive Chairman Sven Ågrup, and the Regional Manager for Europe, Anders Rungård, had a more defensive strategy than the Eastern Europe team, which wanted to move fast. The former agreed that AGA had to enter Eastern Europe but thought that the timing was not optimal. Nevertheless, AGA had to enter at this particular time if the company was to safeguard its home market and enter Eastern Europe at all. The aim was to protect the home region and establish a base around the Baltic Sea. However, the entry was not allowed to entail overly large investments or expenditures. The purchase prices of the large gas monopolies, even if they were former AGA assets, were judged to be too high. The plants were regarded as old and outdated, and the market shares gained were not considered enough to outweigh this drawback. It was the view of corporate management that AGA could not afford to compete directly with the German companies in the bidding for gas monopolies. Therefore, AGA chose a more incremental approach of green-field investments and in rare cases acquisitions of smaller units. This choice deviated considerably from AGA's traditional strategy in other markets, which had been one of expansion through acquisitions (cf. Rutihinda, 1996).

The Hungarian subsidiary was sponsored and started by the Austrian subsidiary, as was the case in Czechoslovakia. The German competitors dominated

the Hungarian market. Messer Griesheim had a market share around 45%, and Linde, 40%, the rest being accounted for by some minor competitors and AGA. The acquisition of a medical gas equipment manufacturer gave AGA a very high market share in that particular segment, approximately 60% (Caming and Jakabffy, 1993). Subsequently AGA's Hungarian subsidiary withdrew from the medical gas equipment business which had been acquired earlier and focused solely on its gas operations. A filling station for air gases and acetylene and a new plant for acetylene production were then built. Acetylene production started in 1992. With production in Hungary, instead of importing from the Austrian subsidiary, production and transportation costs were considerably lower. Total sales had reached 55M SEK in 1993 (Rutihinda, 1993, p. 113).

7.7.3 Poland, the Baltic States and Kaliningrad

The Eastern Europe team investigated the Polish industrial gas industry quite early in the transition process. There were some twelve gas companies controlled and coordinated by a governmental administrative unit under the name Polgas. The team wanted AGA to acquire a large portion of the state-owned aggregation of gas companies. This fairly large investment had to be approved by AGA's corporate management. The Regional Manager for Europe, Anders Rungård, did not approve of investing throughout Poland. Instead, his decision was to bid only on smaller gas companies in the northern part of the country. Most competitors, in particular the German ones, were more interested in the central area and in substantial parts of the south. Rungård's thought was to avoid overly large investments and to improve the chances of a successful acquisition, since fewer foreign competitors were interested in the north. Furthermore, Rungård had another reason for limiting expansion to the Baltic region. It was inspired by the strategy of Karl XII, King of Sweden in the 18th century, to conquer the Northern parts of Europe. AGA could thus protect the Scandinavian Region and the area around the Baltic sea and turn it into a home base.

Even if AGA's bid in Poland was not for any larger portion of the gas industry, it still represented a fairly sizable investment, around \$15M, and had to be presented to the board of directors. The board accepted the proposal - a bid for a

package of three companies in northern Poland. Long and complicated price negotiations followed with the Polish authorities. However, neither the companies concerned nor Polish officials accepted AGA's offer at that particular time, but negotiations continued. Instead, other solutions were found for some of the companies in the package, which was bought out by management or sold to AGA's competitors.¹⁸⁰

The Eastern European team continued their traveling and exploration. The team felt the competitive pressure and wanted to act rapidly. They probed into the industrial gas industry throughout Eastern Europe, discussing the industry structure and conditions with various actors. They collected most of the information themselves, but some was also obtained through relationships with welding institutes, universities, and other parties. The team provided market reports and different kinds of documentation for various decision-makers at AGA, but there was considerable uncertainty about how the Eastern Europe markets would develop. Hence, it was a very laborious task to evaluate the investments.

The team saw tremendous market opportunities and initiated and developed cooperative arrangements with various actors. However, when they entered a new country and when investments were more substantial, they needed the approval of corporate management. This situation resulted in some friction between the team, often supported by local subsidiaries, and corporate management. Although the latter recognized the necessity to enter Eastern Europe at that time, in order to avoid subsequent competitors on their home markets, they did not want to enter as broadly and substantially. The two entities were occasionally quite frank to each other about their differences of opinion.

Regarding the Baltic countries - Estonia, Latvia and Lithuania - however, there were no significant conflicts. They fit the "home-market view" of corporate management and did not require any major investments, since they were relatively small markets and no other multinational competitors showed any particular interest. Timmer from the team traveled around to the towns and countryside of the Baltic states investigating potential investment objects and employees. By 1992 subsidiaries

¹⁸⁰ In the end AGA managed to buy a part of the state owned gas group.

had been established in all three Baltic markets. AGA now dominates these markets, with the rest served only by local competitors.

As for Kaliningrad, a small Russian enclave on the Baltic Sea, resistance from corporate management was stronger. The Eastern European team had once again, in 1991, established good relations with a local state gas monopoly which was seeking to pass into private hands. The team wanted AGA to buy it but had to receive corporate consent. The Kaliningrad management named their new private company "AGA Gas" before AGA had made any investments, a positive sign thought the team, although legal advisors at headquarters protested. The Kaliningrad investment was intended to provide the Baltic markets with gas. The Board and its Executive Chairman opposed the investment even though it was quite small, \$2.5M. However, after some internal discussion, and two years after the Eastern Europe team had made its initial Kaliningrad contacts, the investment was approved.

7.7.4 1990-1996 - Ten New Markets and Still Counting, Russia, Rumania, Ukraine...

The team managed to establish useful contacts in Yugoslavia as well. Naturally the Bosnian Serb, Muslim and Croat war prevented a full entry, but the former market director of the Yugoslavian gas monopoly worked half-time for AGA for a couple of years. When the markets in former Yugoslavia had stabilized, new approaches were made by the team.

A new acetylene plant was established in the Czech republic in 1994, and sales increased considerably in succeeding years (Rutihinda, 1996). When Czechozlovakia was divided into the Czech and Slovak republics, AGA established a subsidiary in each of the countries. The Slovak subsidiary is administered from the Czech Republic and receives its supplies from there. Sales in the Czech and Slovak republics were around 40M SEK in 1993. The markets are divided between AGA and its German competitors, Messer Griesheim and Linde.

In Poland a subsidiary was established in 1992. The team and AGA also continued to negotiate with Polish officials about buying a small part of the state-owned gas company after the failure with the package arrangement in northern

Poland. AGA managed to buy a minor interest in 1993, thus obtaining a small share of the Polish gas market with sales of approximately 15M SEK (\$2M). However, sales increased substantially during the next two years and were close to 100M SEK (\$14M) in 1995 (Rutihinda, 1996). AGA's total market share is relatively small; BOC of Great Britain and Liquid Carbonic are important competitors besides the German companies (AGA, 1995). A second acetylene production plant was acquired late in 1996 (AGA, 1997).

When the Eastern Europe team entered Russia in 1991, they surveyed St. Petersburg as well as Kaliningrad. The Board was very hesitant about Russia in general and there were extensive discussions about establishing a presence there. Nevertheless, the Kaliningrad investment had paid for itself within two years. Limited operations started in St. Petersburg thereafter. The market investigation subsequently continued to Moscow, where the team found the largest gas plant and managed to form a good relationship with the local company. They negotiated a very favorable contract, which the board accepted in 1994.

The Eastern Europe team, now usually consisting of Timner alone, continued to build up many other relations and identified several opportunities in Russia. At that time it was hard to receive support from corporate management at headquarters. However, once the Eastern European countries began to show some economic stabilization in the mid-1990's, it became easier. In addition, by that time many Eastern European subsidiaries were reporting growth, and a new manager had been appointed at headquarters with responsibility for Russia. In these more favorable circumstances, a subsidiary was established in St. Petersburg in 1995, and investments continued in the Moscow area. A new air gas plant was opened in Moscow in 1997, and new acquisition candidates were studied. The principal products were acetylene, air gases and specialty gases, which were marketed primarily to the welding and food industries in Russia. AGA was the only MNC gas company in Russia to start with, but other international competitors have now begun to enter the market.

AGA continued to explore new Eastern European markets, now with stronger support from corporate management. In 1996 the company became the first multinational to enter in Rumania, as it had been in Russia. A joint venture was

formed with a local Rumanian gas company. Otherwise AGA's investments there were primarily green-field, since there were few potential acquisitions.

The largest industrial gas company in the Ukraine was acquired at the turn of 1996/97. And studies continued of new potential markets and acquisition candidates elsewhere in Eastern Europe. By 1997 the Eastern European team had explored ten Eastern European countries: the Czech republic, Estonia, Hungary, Latvia, Lithuania, Poland, Rumania, Russia, the Slovak republic, and the Ukraine. AGA had subsequently established subsidiaries in all of them, and the company's investments in the region were continuing.

7.8 Strategy Creation in the Multiple Retrospective Cases

In this section an analysis of the multiple retrospective study is conducted in terms of *strategy content*, *context* and *process* (cf. Pettigrew, 1985b, 1987b, 1990). A comparison is made with the single in-depth case. The aim is to define the form and character of strategy creation and to develop definitions and constructs. Table 7:2 provides an overview of the companies and strategy-creation processes involved and a comparison with the single in-depth study.

Strategy creation characteristics	Outer Context	Strategy Content	Inner Context & Process (7.7.3 & 7.7.4)	
Character	Complexity (7.7.1)	Puzzle (7.7.2)	Creative motor	Adaptive motor
Multiple retrospective study	<i>Areas of complexity</i>	<i>Focus of puzzle</i>	<i>Units & actors</i>	<i>Units & actors</i>
Ericsson	Markets, Regulations, Technologies (cellular, base stations, switches, etc.)	Mobile telephony? Mobile telephony systems? Mobile telephones?	Radio Com. division, SRA/ERA	Corporate Mgmt., Public Telecom. division
Pharmacia & Upjohn	Markets, Regulations, Technologies	Smoking cessation? Consumer health care? OTC products?	Smoking cessation and OTC units	Corporate Mgmt., Prescription Pharmaceut. divisions
AGA	Markets, Regulations	Eastern European gas industry? Baltics? Central Europe? Russia?	Eastern European Team & Skunkwork, local subsidiaries	Corporate Mgmt., the Board
Single in-depth study	<i>Areas of complexity</i> (4.3.1)	<i>Focus of puzzle</i> (4.3.2)	<i>Units & actors</i> (4.3.3)	<i>Units & actors</i> (4.3.3)
Couplet	Markets, Regulations, Technologies (hydraulics, pumps hydraulic oils, electronics, sensors, etc.)	Non-mechanical coupling systems? Electro-hydraulic systems? Electro-mechanical systems?	Engineers, Technical Department, New President	Corporate Mgmt., the Board

Table 7.2: Overview of strategy contexts, contents and processes (numbers refer to sections in the text).

7.8.1 Outer Context – Complexity

The strategies of Ericsson, AGA and Pharmacia & Upjohn emerged and evolved in a context distinguished by high uncertainty. There are clear similarities to the single in-depth case in this respect. The strategies initially emerged from more or less complete ambiguity. When Ericsson thought of replacing fixed telephone networks with cellular ones, when Pharmacia & Upjohn thought of marketing a smoking-cessation product and subsequently of building a consumer health care business, there was genuine

uncertainty concerning markets, the legal framework and/or the products involved. The situations were the same when Couplet started to look into non-mechanical systems and electro hydraulic systems and when AGA first began to view Eastern Europe as a potential market.

All cases involved complex foresight horizons. The market potential was highly unclear, and market predictions were extremely difficult even after the strategies had taken some form. Each industry was extremely skeptical towards the ventures in question. Ericsson's mobile systems and Couplet's electro hydraulic systems were first considered at best to be products for an up-scale and a limited long-haul segment of the markets respectively, if marketable at all. Pharmacia & Upjohn's consumer health care concept with its main, smoking-cessation product, was not really thought to be part of the pharmaceutical market, and the marketability of smoking cessation was considered doubtful in any case. The Eastern European markets were virtually non-existent to begin with and later unpredictable in all aspects. Uncertainty ranged from who and where the customers were, to whether and when they would buy industrial gases.

Uncertainty regarding regulations and legal structures played an important role in all cases. For Ericsson, Couplet and Pharmacia & Upjohn, various governmental regulatory bodies considerably increased the ambiguity surrounding the potential products and markets. In AGA's case it was not even clear whether there was a body and, if so, where it was and what its regulations were. The technologies in the Ericsson and Couplet cases were far from developed, and it was far from obvious where the technology was headed. The smoking-cessation product of Pharmacia & Upjohn was the first of its kind in the world and naturally involved technological unknowns. There was also the question of what other consumer health care products to include in the product offering. In all cases the uncertainty regarding the company's products and technologies was very high, except in AGA's case, where it concerned the technologies of customers and partners. In sum, as in the single in-depth case, the outer contexts in the multiple retrospective case were highly ambiguous in terms of markets, legal framework and technology and, hence, characterized by *complexity*.

7.8.2 Strategy Content – A Puzzle

The strategic issues facing each company were so complex that they were met with more or less total confusion in the beginning. They were very imprecise and undefined, and not even framed as specific "issues" at all, let alone "strategic" issues. There was no clear indication of *where to go* and little sense of the process of *how to get there*; it was therefore quite impossible to sketch a strategic plan. Traditional strategic planning or formal strategy processes did not characterize any of the strategies; no distinct map or directions were at hand. Moreover, strategies did not solely involve competitive maneuvering, in which at least the nature of the industry is clear, and there were no well-defined resources to build on, either, except in the AGA case. It seemed not to be a clear situation where a direction or content was followed by a process, nor was process clearly followed by content. Rather, these basic aspects seemed to go hand in hand. Sometimes the former was ahead of the latter; sometimes the reverse was true.

In the single in-depth study, non-mechanical systems (electro mechanical systems and electro hydraulic systems) were not considered as a strategic issue by Couplet at the outset, although it was one issue among many other issues of industry development facing the company. Couplet had little conception of where its various actions regarding the potential new products (electro mechanical systems and electro hydraulic systems) and technologies would lead. Furthermore, management did not really know what they wanted to achieve with those actions, either. Thus, there was not only a high degree of uncertainty and complexity regarding the outer context; the strategic issue itself was also unclear. The various actors were unsure about what the issue was and what role, if any, it would play for the company and the industry.

In the multiple retrospective study, the strategic situations were similar in the cases of Ericsson and Pharmacia & Upjohn. What later evolved as a major strategic issue at each company was at the outset one among numerous quite imprecise general considerations. These were more questions of overall concern and puzzles to the individuals involved than clearly defined strategic problems for the company.

Traditional strategic planning processes certainly did not characterize the strategies. Ericsson did not have any specific strategy at all for mobile systems or telephones to begin with. A peripheral section of the corporation had an idea about

mobile terminals, but there was considerable confusion regarding the project and its potential. Corporate management was puzzled and quite negative towards the idea.

Similarly, the consumer health care issue at Pharmacia & Upjohn was more of a puzzle than a well-defined strategy. It was discussed and supported by a few individuals, but its importance was considered doubtful, and corporate management was skeptical.

At AGA there was also confusion rather than a definite strategy. The Eastern European team, or "skunkwork," looked into the Eastern European markets and started their own strategy-creation process, but others were skeptical.

To sum up, strategy content was not identified from the start; it assumed an indistinct shape during the processes and then gradually became more clear, but it was not even completely apparent towards the end. In all cases there was not only a high degree of uncertainty and complexity regarding the outer contexts, but considerable ambiguity about the strategic issues themselves. The various actors were unsure about the vague issues and what role they would play for the companies and industries, if any. In other words, it was not possible to identify any specific strategic issues or content until very late. The strategic issues essentially involved puzzles rather than well defined strategic questions or decisions. The strategic issues were not specified in terms of content, planning or competitive maneuvering, but were more like a tangle of unknowns to the companies and managers involved. "*Strategic puzzle*" seems to be an appropriate designation, rather than strategy content, since the strategic concerns first emanated as loosely defined issues surrounded by confusion and ambiguity rather than specific problems or ordered and framed inquiries.

The puzzles involved questions both of *where to go* and *how to get there*, and they developed in conjunction. Sometimes *where to go* was ahead of *how to get there*, and sometimes the reverse was true. Sometimes the companies tried to determine what the solution was. Sometimes they simply resorted to trial and error. The two fundamental strategic questions seem to have developed hand in hand. Similarly, the two questions of strategy direction or content and process were intimately linked to each other in the strategies described here. And they *both* developed in an emergent fashion over time. The final content of the strategies was closely linked to the processes through which they emerged. Even if a strategic direction did become clear

after a while, the circumstances in the process subsequently took the strategy elsewhere, in another direction. And this changing content, in turn, determined the subsequent strategy process to a high degree. The final content of the strategies seemed to be closely linked with the processes through which they emerged.

7.8.3 Inner context –Two Strategy Motors.

In the single in-depth case, the strategy process was essentially divided into two sub-processes. One group was hesitant towards the strategic issue or puzzle, while the other propelled it forward in close cooperation with external links to customers and actors in other industries. Corporate and divisional management were not particularly interested in the non-mechanical system or electro-hydraulic system question at first, even if they thought it might have some impact on more exclusive long-haul truck models. Later, however, more peripheral actors, engineers and technical departments and the new President, who had been recruited from another industry, became increasingly active. The strategy was essentially developed within this latter group and in close cooperation with buyers, primarily Roadstar. External links to customers and actors in other industries played a primary role.

Similar observations were made at AGA, where a "skunkwork" consisting of a couple of managers together with local subsidiaries prepared for entering Eastern European markets in an unconventional and entrepreneurial way, partly against the opposition of corporate management.

The controversy was even more apparent at Ericsson and Pharmacia & Upjohn. At Ericsson a small and peripheral radio communications unit, SRA (later ERA), fought for its concept of mobile communications in conflict with corporate management and the major public telecommunications and switching divisions. At Pharmacia & Upjohn another peripheral unit battled with corporate management and other divisions over smoking cessation and consumer health care. Senior and/or corporate and/or divisional management predominated in one sub-process at the case companies, and the other sub-process included more peripheral actors or "skunkworks."

The two strategy sub-processes were fundamentally different in character. From the very start and throughout the entire process, they differed in style and were in conflict with each other. They differed in their interest in the strategic puzzles, handled them quite differently and clashed with each other. One sub-process did not involve the puzzle or its actors ignored the puzzle altogether in the beginning, while the other sub-process drove the strategic puzzle and its actors started to examine the first pieces of it and tried to combine them in various ways. The two sub-processes included quite different approaches and methods towards the strategic puzzle. They used disparate ways of learning about the puzzle and of interpreting clues and patterns. There were two separate and distinct strategy processes at work. In brief, *two different strategy motors* operated in the inner context.

7.8.4 Strategy Process - Learning Dynamics: Creative and Adaptive Strategy Logics

The way in which the two strategy motors and the involved actors acted towards the strategic puzzle and searched for information seems to have influenced their position and their development over time. They acted differently and used diverse mechanisms for assimilating knowledge; as a result, they adopted different positions regarding strategy development. In the single in-depth case study, assimilation of external knowledge related to customer relationships in the sub-process or strategy motor outside corporate and divisional management was a primary factor that developed the strategy. This "customer embedded" strategy development was in sharp contrast to the other strategy motor's "industry embedded" character, emphasizing and examining existing technology and industry actors.

This tendency of the two strategy motors to include diverse *learning dynamics* was present in the Ericsson, AGA and Pharmacia & Upjohn cases as well. In Ericsson the peripheral SRA unit coordinated and integrated different technologies via various forms of cooperation, consultants and acquisitions. They successively learned about how to develop, manufacture and sell mobile systems and later mobile telephones. External networks were important in all cases. The inclination of the two sub-processes or strategy motors to rely on different learning and knowledge was present

in all of the cases. In AGA, the "skunkwork" assimilated and combined market, technological and institutional knowledge, and in Pharmacia & Upjohn knowledge about the pharmaceutical industry was combined with knowledge of consumer markets by the peripheral unit involved in smoking-cessation and consumer health care. In summary, the knowledge framework and the assimilation, combination and integration mechanisms in the two sub-processes differed considerably. In accordance with organizational learning literature it seemed as if social interactions and shared experiences between individuals and actors in each of the two sub-processes or strategy motors resulted in similar forms of learning and interpretation within each motor. It appeared as if the conception, interpretation and development of the strategies in the two motors was a function of separate types of *learning dynamics*. These included various forms of *knowledge assimilation practices* such as experiences, experiments, information acquisition and scanning activities, which integrated, combined and transformed knowledge.

It is indicated in the observations above that knowledge was coordinated and combined through various knowledge assimilation practices in the two motors via different types of learning dynamics. Externally focused knowledge assimilation practices, or learning, were predominant in one strategy motor, while learning was more oriented towards the current industry and resources in the other. In general it was externally oriented knowledge assimilation practices within the peripheral group, such as informal scanning, experiments and trial and error, which developed the strategies. The focus was externally directed towards industries and resources outside the prevailing and traditional ones.

The strategy motor in this peripheral group involved knowledge assimilation and combination from entirely new technology and market sources. This "*creative motor*" emphasized the resolution of the new strategic puzzle, and was centered primarily on the opportunities for it and its development. It was more directed at external networks on the periphery of current industries, and outside them, and oriented toward entirely new resources and new resource combinations. Its knowledge assimilation practices were more exploratory and actively developed and created strategy through probing the environment and building external networks. It involved various forms of *creative learning dynamics*.

The other motor was more focused on adaptation within the limits of the prevailing strategy. This "*adaptive motor*," involving the group that first resisted the strategic puzzle, focused on the prevailing strategy, its planning and maneuvering, and its relationship to the new strategic puzzle. It worked within the historic industry and resource spheres, and its knowledge assimilation practices were aimed more at exploitation than at exploration. Different forms of *adaptive learning dynamics* were involved.

The creative and adaptive strategy motors relate to Schumpeter's (1947) *adaptive and creative responses towards economic change*. Adaptive response refers to changing within the confines of existing tradition and practice, while creative response pertains to seeking solutions outside of existing practice. There are also similarities to Burgelman's (1983a; 1983b; 1991) distinction between "induced" and "autonomous" strategy-making. Like these two strategy processes, the adaptive and creative strategy motors operated on two different organizational levels (corporate vs. divisional or subsidiary levels).

Apart from the features mentioned above, the character of the process as such differed. The adaptive strategy motor was of a *teleological* ideal type (Van de Ven and Poole, 1995), including a single unit and a constructive type of change. Thus, the change as such is discontinuous and breaks with what has previously existed. The creative strategy motor, on the other hand, was of a *life-cycle process* ideal type, involving a single entity, a prescribed mode of change and a sequence from idea to implementation. Both processes are thoroughly discussed in the upcoming chapters. In summary, the knowledge framework and the mechanisms of knowledge assimilation, combination, integration and transformation in the two strategy motors differed considerably.

7.9 Summary and Conclusions

In Chapters Five and Six theories of strategic management and organizational change were examined and evaluated in relation to strategy creation, complex foresight horizons and strategy-content – strategy-process relationships, particularly for the single in-depth case study. The overview identified what appeared to be some gaps in

both strategy-process and strategy-content theory in regard to strategy-creation and strategies involving complex foresight horizons.

Some important conclusions were drawn. It was concluded that there was a gap in *industrial organization* (IO) perspectives and more static *resource-based views* (RBVs) within the domain of *strategy content theories* in respect to strategic management involving complex foresight horizons and strategy creation. A major reason seemed to be their economics-based assumptions. IO views essentially treat the firm as a black box with no indication of how industry positions are discovered or created, and traditional RBVs consider internal resources as largely given. *Dynamic resource based perspectives* are more promising, even though they are far from fully developed, and it does not seem self-evident that economics models can handle all important strategic management aspects in strategy creation and strategic management practice.

Theories illustrating strategy process, which apply *strategy-formulation perspectives*, were concluded to be inaccurate for the study of strategic management involving complex foresight horizons and of strategy creation in descriptive, explanatory and normative terms. These theories appear to ignore strategy implementation, communication and development altogether. On the other hand, *strategy-formation* perspectives, including organizational change theories, provide more relevant theories. However, organizational change theories often seem to underestimate or disregard more active organizational and management roles and complex diversified organizations. It was concluded that the focus on explaining environment-organization change, rather than on how organizational and strategic changes come about, is a limiting when exploring strategic management. Furthermore, the emphasis on given environmental forces, together with the lack of connection to strategy content and the deficiency in analyzing diversified organizations, restricts the relevance of these theories for strategy creation and MNCs respectively. More *dynamic strategy formation* perspectives provide an ample foundation for further research on strategy creation, even if they do not quite seem to go beyond their descriptive focus and link up to what strategy is about and how strategic change occurs in detail. Managerial actions, strategy content and relationships between content and process are often left out.

Promising bases for evaluating and explaining strategy-creation and strategy-making involving complex foresight horizons were identified in the dynamic resource-based perspectives as well. In brief, dynamic RBVs and purposive strategy-formation perspectives were emphasized as promising foundations for a theory concerning strategy creation and for subsequent use in the study. *It is important to emphasize that both strategy-content theories and theories relating to strategy process provide relevant explanations within their respective domains, but there appears to be a void when it comes to strategy creation and strategic management involving complex foresight horizons. In terms of normative advice, strategy-content theories seem suitable when industries and resources are reasonably well defined.*

The first preliminary findings and results presented above might shed some further light on strategy-creation and strategy-making with complex foresight horizons. The fact that two distinct groupings were involved in the strategy-creation processes might explain some of the anomalies observed in this study and in prior strategy-process studies. From the general analysis of the strategies described in the single in-depth and multiple retrospective studies, it was evident that the companies were confronting quite imprecise considerations and not definite strategic problems. It appeared as if the individuals involved were facing what could best be termed a puzzle.

These strategic puzzles incorporated many of the features previously described in strategy and organizational research, as discussed in the previous chapter. First, the resulting strategies fundamentally changed the basis for competition, creating new markets, technologies and products. Second, and as a result, they exhibited competitive advantages in the form of advantageous market and/or resource positions. Third, the strategies were achieved through an emerging process over time, because of bounded-rationality factors, and not through strategic planning. Fourth, they had a collective character in the sense that diverse groups of actors were involved. Fifth, there was considerable inertia at the companies when it came to developing the new strategies. Sixth, however, there seemed to be a certain purpose or vision involved in the processes, even though at times obscure. Seventh, a range of diverse actions and knowledge-assimilation activities were involved, analytical as well as more ad hoc, aimed at developing and clarifying the emerging strategies. Finally, these activities

differed among actors depending on their cognitive frameworks and barriers to and enablers of taking action. The first observation, about the creation of new markets, products and technologies, is consistent with theories of fundamental competition (Schumpeter, 1934; 1942). The second, about the creation of advantageous industry and resource positions, corresponds to strategy-content theories in general. The following three characteristics, in contrast, stress incrementalism, the diversity of actors, organizational inertia and irrationalities. They are along the lines of most strategy process and organizational change theories. The sixth observation, concerning visions and purposes involved, fits concepts of purposive strategy formation, but also of strategy content. The seventh observation, about the mix of analytical and ad hoc measures taken, coincides more with the implicit process view of strategy-content theories, playing down inertia and irrationality.

Taken together, these observations might seem to include some paradoxes: no planning, but some planning nonetheless; no general strategic aim, but many purposes along the way; inertia, institutional pressures and buffering, but also energetic activity and strategic actions; content driving process and process driving content.

The final observation mentioned above can explain some of these paradoxes. It emphasizes the diversity among groups of actors, perceptions and actions. Different groups of actors used various approaches to inform themselves about the strategies and in developing the strategies. Inertia, rationality and perceptions varied among these actors. *Thus, the paradox can be explained by the fact that there were two quite different groups of actors and strategy processes; there was the adaptive strategy motor and the creative strategy motor.*

One group was dominated by corporate or senior management and/or the board of directors. Another consisted of more peripheral actors or skunkworks in the form of divisional management, project teams and R&D managers. These two groups showed a different interest in the strategic puzzles, handled them quite differently and were in conflict with each other. The first group ignored the puzzle altogether in the beginning, while the other group started to identify the first pieces of the puzzle and to try to resolve it through various means. The two groups adopted quite different approaches to solving the puzzle, disparate ways in terms of picking out the pieces and interpreting the patterns. There were two separate and distinct strategy processes

at work. These two fundamental strategy processes and their characteristics will be further examined in the following chapters.

In sum, the characteristics of strategy content, context and process confirm the findings in the single in-depth case. The overview above shows that the outer strategy context was dominated by extremely high uncertainty, or *complexity*, in terms of technology, legislation and markets. Strategy content was highly ambiguous and was characterized as a *strategic puzzle*. As for the inner context, *two sub-processes* developed the strategy in conflict with each other; there was an *adaptive motor* and a *creative motor*. Diverse *learning dynamics*, ways of assimilating and interpreting information about the evolving strategy, were used in the strategy motors in order to provide information and to develop the strategies. One set of *knowledge assimilating practices* accumulated knowledge within the traditional industry and resource field. The other directed its attention outside this established sphere, towards external industries, technologies, markets and other actors. The strategies were to a large extent based on resources outside the companies' own resource spheres and industries apart from their own. External-directed knowledge assimilation practices and external resources and industries seemed to play a pivotal role in the development of the strategies.

Some of the observations discussed here have previously been neglected or run counter to some of strategy content and process research. In particular, it seemed as if strategy content and strategy process were indistinguishable in the complexity of the outer contexts and the puzzles of the inner contexts. In a strategy-creation setting the relationship between the two becomes particularly apparent. In the next chapter the multiple retrospective study is further evaluated in respect to the interrelationship between strategy content and strategy process, and to strategic management theories, before examining the adaptive and creative strategy motors in detail. Alternative strategy-creation paths to the traditional industry- and resource-based ones are proposed.

Chapter 8

STRATEGY CONTENT AND PROCESS RELATIONSHIPS – ALTERNATIVE STRATEGY CREATION PATHS

8.1 Introduction

The description, analysis and examination of the multiple retrospective study in the prior chapter confirmed earlier observations in the single in-depth case study. The general characteristics of strategy creation in terms of outer and inner contexts, and strategy content and process, was outlined. The outer context was dominated by *complexity*. Strategy content was not defined; basically the company was facing a *strategic "puzzle."* The inner context was divided into *two sub-processes*. These sub-processes, or *strategy motors*, were identified as an *adaptive* and a *creative motor*. They displayed diverse types of *learning dynamics*, including various *knowledge-assimilation practices* through which knowledge was coordinated and combined.

It was also observed, as in the single in-depth case study, that the dichotomy between strategy content and strategy process appears to break down when strategy creation is studied, and there seems to be a gap in contemporary theories of strategic management and organizational change when it comes to explaining strategy creation. The basic criticism is not that the theories are incorrect, but that strategy-content theories do not relate to strategy process and that strategy-formation theories do not relate sufficiently to strategy content. When strategy creation is studied, both aspects need to be analyzed together. The disconnection is found in fundamental relationships which seem to be of significant importance in strategy creation.

The analysis of strategy creation in the single in-depth and multiple retrospective case studies is continued in this chapter. Contemporary strategic management and organizational-change theories are further examined in light of the observations in the multiple retrospective study. In particular, the strategy content – process relationship is evaluated, and some preliminary explanations as to how

strategy-creation develops are provided. An alternative model of strategy creation and various *strategy-creation paths* are presented.

8.2 Strategy Creation and Strategy Content

It is quite clear that it was difficult to identify critical resources and capabilities as well as effects of scale and experience early on in the strategy-creation processes. After the strategic issues had become identifiable and had taken some form, it was still hard to specify what specific resource and industry factors to build on. In the cases, strategy content (industry and resource positions) was not identified from the start; it took some indistinct shape during the processes and gradually became clearer, but it was not completely apparent even towards the end.

It is indeed difficult exactly to determine even *ex post* what specific industry and resource factors propelled the development of strategy. Industry and resource factors naturally played a role in the strategy-creation processes, but in an analysis in terms of IO (Porter, 1980) and RBV (Rumelt, 1984; Barney 1986a) factors, there is a risk of rationalization after the fact. A specific experience, or learning effect, and resource can now be pinpointed, but they were impossible to determine at the time. In normative terms there is a potential danger that the conclusions drawn will be almost tautological, that specific industry and resource factors will be outlined as strategically important because *they have been observed* to provide competitive advantage. This is no guarantee, however, that they will be important factors in the *future*.

8.2.1 Strategy Creation and Industrial Organization

Industrial-organization concepts of scale, concentration and entry barriers appeared to have little meaning *ex ante*. At the outset there was no mobile-communications system industry (Ericsson), there was no non-mechanical system or electro-hydraulic system industry (Couplet), and there were no smoking-cessation or well defined consumer health care (Pharmacia & Upjohn) industries. Even in AGA's case, the industry, though more clearly identifiable, was not well defined, either, since industry borders, buyers, suppliers, etc. were indeterminate. While in that case the strategy

process could perhaps be interpreted as a competitive game in terms of moves and countermoves within an industry (Knickerbocker, 1973), this characterization was not appropriate until the strategic issue had been clearly framed and some order had emerged.

Even when it comes to explanations after the fact, it is difficult to determine specifically what the experience and scale effects were and where they were located in the companies examined. Ericsson had no experience or scale advantages in manufacturing radio base stations, a central part of the mobile telephone system. In contrast, Motorola and other competitors had longer experience with this technology. The situation in mobile stations and telephones was similar; competitors were ahead of Ericsson. In switching Ericsson was on a par with competitors in terms of mobile-telephony applications. Couplet's position was similar. A number of competitors were far ahead on the electro-hydraulic system experience curve and manufactured on a larger scale. Concentration moves and raising barriers did not seem to be a determinant. Even in the AGA case it is difficult to discern any production economies in the early strategy-creation process, since the company started out small and in bottled gases, which essentially is a small-scale local business; however, clearly organizational and managerial scale advantages might have been important.

It seems as if the companies penetrated external networks and industries external to their own in order to gain resources and experience rather than positioning themselves and engaging in collusive behaviour within existing industries. Admittedly, some advantages in the form of experience and scale effects could be identified after the strategies had been instituted. Similarly, Ericsson made some minor acquisitions after some years, when the strategy was more defined, but they seem more aimed at gaining technology competencies and engineers than raising entry barriers.

8.2.2 Strategy Creation and the Resource Based Views (RBV)

In AGA's case there were clearly resources and capabilities available to build on. In the other cases it is problematic to use resource-based views in explaining the strategies that developed. At Ericsson no one knew what the important resources and

capabilities would be in the mobile-telephony systems industry. Similarly, they were highly undefined for Pharmacia & Upjohn in smoking cessation and the consumer health care business. In particular, technological and other core competencies were unidentified. Couplet in the electro-hydraulic system and truck trailer control industry had no conception of what the important core competencies were, not even after the strategic issue had become quite well defined. Was the critical element the electronic sensor devices? Was it the hydraulic pump? The cylinder coupling itself? The integration of the entire system? Or perhaps competencies as regards testing equipment and simulations? Or old relationships with the truck industry? Or was it something else?

Ex post it might be possible to analyze what specific resources and capabilities and competencies became decisive for the development of the strategies. Certain technological and market competencies played determining roles in the development of strategy, and the case companies brought resources and capabilities with them into the strategy processes. However, there are problems in doing this analysis after the fact as well. It is difficult to identify specifically what resources and capabilities made Ericsson a world leader in mobile telephone systems and telephones. It did not have many of the core technological resources to build on. Ericsson had no base stations, and it had inferior mobile stations and telephones. The switches were clearly overdimensioned and much too expensive for mobile networks. In terms of capabilities, much of the radio and all the cellular-planning competencies were attained through collaboration, acquisitions and external recruitment of consultants. In marketing Ericsson certainly had capabilities in dealing with former monopoly operators and governments, but most customers in the developing mobile-telephony industry were new operators of a completely different character. Furthermore, end consumers played an increasingly important role, especially in telephones, which subsequently developed into a mass consumer market.

Similarly, Couplet started without any particular resources or competencies for electro hydraulic systems. It, too, turned to external sources of knowledge, outside the corporation and even the industry. *It seems as if most of the resources and competencies were acquired externally and developed internally from the ground up rather than already existing in the firms.* For Pharmacia & Upjohn it was also a case

of progressively building resource and capability positions and acquiring them externally, rather than only building on existing ones.

It seems clear from the discussion above that it is difficult to identify specific core competencies in the different cases. Except for AGA's case, where it was possible to build on existing resources and capabilities (cf. Rutihinda, 1996), competencies are difficult to determine. On a more general level, however, some resources and capabilities might be identified. The companies in the single in-depth and multiple case studies had, after all, competencies in related and complementary technologies.

The importance of complementary assets in product and strategy development has earlier been emphasized by Teece (1987). The complementary assets in the cases studied might have played an important role, but at the same time it seems as if other resources and capabilities were even more significant. In Ericsson's case, cellular planning capabilities and radio base station technologies, both core parts of mobile systems, were acquired externally and integrated into the company. At Couplet virtually all core technologies had to be assimilated from external sources and then integrated and transformed in the firm. Similarly, Pharmacia & Upjohn had to turn to external actors and other industries in order to generate technologies and marketing competencies. Furthermore, other actors, which controlled the same complementary assets as the companies studied, did not generate the new strategies or enter the new industries (e.g. other truck sub-suppliers in non-mechanical systems), while actors without them did enter (e.g. Polychem in electro hydraulic systems).

Even if there were no "hard" or articulated technological or marketing competencies that determined the strategies, it might be suggested that there were "softer," more tacit or subtle competencies and capabilities which are less easily identifiable. In the Couplet case, for example, it seemed as if relationships to customers and *their* competencies might have been a resource base. However, when the resource definition is stretched that far, it seems to lose much of its meaning in terms of the RBV.

Another problem in identifying resources and capabilities is to trace where they, in turn, came from. Perhaps, they were inherent in the companies' culture. The next challenge then becomes to find the origins of the organizational culture. This

search for the ultimate resources and capabilities could continue forever ; there thus is a fundamental problem of infinite regression (cf. Collis, 1994). Clearly it is highly problematic to identify which specific resources and capabilities played a decisive role in the development of the various strategies. It is even more difficult to identify what, in turn, determined those resources and capabilities.

It is, however, possible to identify a different kind of capabilities. *Capabilities involving the integration and coordination of external resources and competencies were present in all cases.* In the Ericsson and Pharmacia & Upjohn cases, capabilities of this kind seemed to dominate over others. In these cases there were no specific industry, resource or customer bases in which to anchor the strategies. Integration, coordination and combination capabilities seemed to be the determining factor. And even if there were resources and capabilities available in AGA, and customer relationships and customer competencies for Couplet, the capability to integrate and coordinate them with those in external networks seemed to be equally important in these cases. *It might be suggested that a kind of "metacapability in integration and coordination" was decisive - an ability to acquire, integrate and coordinate resources and other capabilities.* However, this, again, is quite far from the traditional resource-based view and comes closer to the dynamic-capabilities approach (Teece, Pisano and Shuen, 1997), which is further discussed at the end of this chapter.

8.2.3 Strategy Creation and Strategy Content – A Summary.

The analysis of strategy content indicates that it developed over time, hand in hand with strategy processes, rather than being specified in terms of industry and resource positions from the start. It was a process of incrementally building resources and competitive positions, rather than choosing among given resource and industry positions. It seems that if strategy processes had been different, strategy content would have differed as well. The process of linking to and assimilating external resources and capabilities, outside the realm of the MNCs and their industries, in external networks, was important in determining the strategies. It was difficult to identify either critical resources and capabilities or scale and experience effects early on in the strategy-creation processes. Even after the strategic issues had become identifiable

and had taken some form, it was hard to specify what specific resource and industry factors to build on. Moreover, it is even difficult exactly to determine *ex post* what specific industry and resource factors propelled the development of strategy in terms of strategy-content theories. The findings far from rule out the importance of existing strategy-content theories in explaining strategy development, but they indicate that strategy content needs to be closely linked with a theory about strategy process in strategy creation.

Industry and resource factors naturally played a part in the strategy-creation processes, but an analysis solely in terms of IO and RBV factors involves the risk of rationalization after the fact. *Specific experience effects and resources might be identified in retrospect, but they were impossible to determine at the time.* External networks, including peripheral actors, resources and industries, were pivotal in the creation of the strategies. And processes of assimilating external knowledge, as well as external resources and industries, were decisive in determining strategy content. In brief, the findings indicate that strategy-content theories have some limits when it comes to explaining strategy-creation and strategy-making involving complex strategic foresight horizons. In these cases the role of strategy process and peripheral industries, resources and organizational sections becomes apparent. Once industry borders and resources have been sufficiently determined, content theories seem to be of greater importance.

The economics-based premises of the content theories seem vastly to underestimate organizational friction in strategy-creation and strategic change processes. It is clear that many of the assumptions inherent in the economically oriented strategy writings of the industrial-organization and resource-based views did not apply when compared in relation to the case studies. *The case companies did not readily respond to the complexity involved and did not easily identify and select various industry and resource positions or change their strategies, selecting various market and resource positions - on the contrary.* To be able to do so, it seems as if they would have had to know very much about the puzzle or strategy content in advance. In fact, it is difficult to determine exactly what role industrial organization and resource-based factors played during the creation of the strategies in Ericsson, Pharmacia & Upjohn, AGA and Couplet.

8.2.4 Strategy Creation and More Dynamic Strategy Content Perspectives

It was observed in Chapters Five and Six, where contemporary strategic management theories were analyzed in relation to the single in-depth case, that more dynamic approaches linked to industrial-organization and resource-based views might be more accurate in analyzing strategy creation. Game theory, transaction-cost and evolutionary economics are more dynamic in the sense that they cover multiple periods and endogenous forces. However, some of them seem not quite able to handle the complexity and rigor involved in strategy creation. The strategy-creation processes observed involved significant inertia, irrationalities and diversity in perceptions, thus posing a challenge to some of these more dynamic versions as well. Indisputably, game theory provides a richer basis for reasoning about strategy-making compared to traditional industrial-organization economics. And perhaps it could be applicable in the cases here to a certain extent, but an analysis would still entail the use of quite simple models, far from all the various contingencies involved. The complexity in which the strategies of Ericsson, Pharmacia & Upjohn, AGA and Couplet evolved would result in an extremely intricate game where actors and the basis for their decisions would constantly be changing. It is difficult to imagine how that could be handled in a game-theory model without making extreme assumptions regarding the level of rationality.¹⁸¹

The thinking in evolutionary economics, one of the foundations of resource-based views, seems more applicable. Evolutionary economics recognizes that the strategic issues, or choice sets, are not given, and neither are their consequences (Nelson and Winter, 1982, p.276): "...there is no choice that is clearly best *ex ante*." This is, of course, of particular importance in strategy-creation, which corresponds to Schumpeter's (1947, p. 222) "creative response" or creative economic change,

¹⁸¹ The cases studied concerned different kinds of entries into new businesses. Jacquemin (1987, p.124) has outlined the rationality assumptions in a new-business-entry decision game: "The entry candidate is assumed to be capable of imagining all possible cost structures of its adversary and of attributing a subjective probability to all eventualities; of calculating the likelihood of the price strategy used by its rival as a function of each cost structure $c_1, \dots, c_j, \dots, c_n$; of estimating the joint probability to have at the same time a cost structure c_j and a price policy p for each possible cost structure; of evaluating the marginal probability of having this price policy, whatever the cost structure; and finally of assessing the posterior probability of the cost structure affecting its rival."

something outside the realm of existing practices: "First, from the standpoint of the observer who is in full possession of all relevant facts, it can always be understood *ex post*; but it can practically never be understood *ex ante*; that is to say, it cannot be predicted by applying the ordinary rules of inference from the pre-existing facts." This is in accordance with the observations in this study, where resource and industry positions were indeterminate at the outset and counter to many prior conceptions in the respective industries. However, it seems as if strategy content and process were linked and that their interrelationship might provide some possibilities for prediction.

It is acknowledged by Nelson and Winter (1982, p.378) that the character of strategic issues or innovations is not totally separated from the process through which they emerge: "Throughout this book, and especially in Chapter 5, we have stressed that knowledge *how* decisions are arrived at in business firms may tell us something about *what* decisions will be reached. To focus exclusively on the benefits and costs that a firm derives from actions and to ignore how it gathers, processes, and evaluates information and options is to be blind to useful predictive information".¹⁸² It was an important observation in the multiple case study *that the adaptive and creative motors differed in process character, resulting in different conclusions regarding the strategic puzzles*. The influence of different process characters on strategy content will be further examined in the upcoming chapters.

More dynamic RBVs can provide insights regarding the strategy-creation issues studied. It is apparent that the organizational and managerial processes described by Teece, et al. (1997) in their *dynamic-capabilities view* were involved in determining the strategies (i.e. coordination/integration, learning, reconfiguration). It was observed in the single in-depth and multiple retrospective case studies that integration and coordination of various resources and competencies played an important role. The dynamic-capabilities view is further discussed in the last section of this chapter. As indicated above, these dynamic RBVs take process aspects into consideration. Perspectives that are exclusively focused on process characteristics of strategy are discussed next.

¹⁸²It is important to note, however, that evolutionary theorists offer a theory of industry behaviour and not one of individual firms behaviour and strategies (Nelson and Winter, 1982, p. 36).

8.3 Strategy Creation and Strategy Process

It was concluded above that strategy process is taken for granted in strategy-content theories. They do not explicitly take into consideration the process of building industry or resource positions. Implicitly, however, they are based on a strategic planning approach where strategies are developed *ex ante* and are quite easily changed; firms smoothly respond to changes in the environment, particularly in IO interpretations. These features were clearly not present in the cases studied.

On the other hand, more process- and change-oriented research often disregards strategy content. In many explanations of organizational change in organizational theory, (e.g. Lawrence and Lorsch, 1967; Cohen et al., 1972; Hannan and Freeman, 1977; Di Maggio and Powell, 1983) there seems to be no specific (strategy) logic or content, at least not of a purposeful or forward-looking nature. Essentially the theories do not address issues of strategic purpose or content. The implicit aim and strategy of organizations and managers, according to these views, is often one of passively adapting and accommodating to more or less deterministic external forces. These characteristics of strategic aim and content are not in accordance with what was found in the development of strategy as described here. It is clear from the cases that the strategy processes were closely linked to strategy content; the processes did not simply develop with no sense of direction or entirely as a result of external pressures.

8.3.1 Strategy Creation and Strategy Formulation

It came as no surprise that the strategies did not follow a planning scheme. Traditional models of strategic planning and management, in which strategies are first planned and then implemented, clearly did not apply. *Not in a single case did traditional strategic planning play a significant role in the development of the strategies.* Instead the strategies developed in an evolutionary fashion from peripheral sections of the companies. The complexity of the outer contexts in each case was much too intricate to be planned for. It was evident that the strategies exhibited an incremental, but purposive, character (Mintzberg, 1978; Mintzberg and Waters, 1985; Pettigrew,

1985a; Quinn, 1980)¹⁸³. Peripheral actors, (Burgelman, 1983a, 1983b, 1991) rather than managers and strategic planners in the centre, played the pivotal role.

This is in sharp contrast to the explicit or implicit strategy formulation or planning character of strategy-content theories (e.g. Porter, 1980; Barney, 1986). Strategy content-theories of industrial organization and resource-based views do not specifically address the process issue. They do not explicitly take the process of building industry or resource positions into consideration. The process is rather taken for granted and explicitly or implicitly assumed to follow strategic planning approaches with top management and planners in the centre. This characteristic did not seem to apply to the strategies studied. Instead, peripheral organizational sections and actors were central to the development of the strategies. *Planning or formulation and implementation were not separate; they co-existed and co-evolved. Essentially the distinction between planning and implementation broke down in these evolving strategies. They were interwoven and incrementally developed together.*

Nevertheless, at the end of the strategy-development process, there were features of strategic planning in some of the cases. In the peripheral creative motor of Ericsson, strategy concepts and analyses were used to clarify ideas when outer complexity had been radically reduced and the strategic puzzle was clearer. Similarly, in the case of Pharmacia, deliberate strategic planning processes, although somewhat untraditional, played a certain role, particularly in the late stages of strategy evolution. Thus, at Ericsson and Pharmacia & Upjohn, information relevant to strategy was provided by means of strategy analysis and formal methods once the complexity had been reduced. However, the strategic puzzles were virtually solved by that time and only the end game was left, fitting the last pieces into the puzzle.¹⁸⁴

In addition to the breakdown of the division between formulation and implementation, another dichotomy in strategic planning approaches seems to disappear as well when the cases are examined in detail. It is the division between *corporate and business strategy*. Strategy creation is characterized more by a

¹⁸³ Once again, it is important to note that there are several differences within the strategy formation views. Quinn (1980, 1978) has a more rational view while others stress contextual properties such as political and power factors to a larger degree (e.g. Pettigrew, 1985a).

¹⁸⁴ In retrospect it might be argued that planning could have been used to a larger extent than it was in the final stages of the strategy processes. A complication is, however, that the actors faced the problem

cumbersome process successively leading into a new business rather than an individual decision or a strategic plan specifying a new business area. It seems as if strategy creation reaches beyond the definition of corporate strategy as merely including the leverage of traditional resources into new markets and industries, as is often depicted (cf. Barney, 1997), and it does not include or relate to all other corporate strategy considerations, apart from new business ventures, found in other concepts of corporate strategy (cf. Goold et al., 1994).

On the other hand, strategy creation, does not specifically concern how companies compete within a specific industry and market, as in business strategy, either. In fact, it is problematic to delineate strategy creation in terms of the traditional corporate and business strategy concepts. It does not appear to be covered by them. *The distinction between corporate and business strategy - like the one between planning and implementation - breaks down in confrontation with strategy creation; these aspects of strategy also co-existed and co-evolved.*

In sum, it is clear that traditional planning did not have an important role to play in the strategies described. Content and process seemed to evolve together, and peripheral actors, rather than central corporate management or strategic planning units, propelled the strategies. Planning and implementation, and corporate and business strategy, co-existed and co-evolved.

8.3.2 Strategy Creation and Strategy Formation in Theories of Organizational Change

The companies in the study encountered external pressure and inertia in developing the new strategies as described in organizational theories discussing organizational change (e.g. contingency, institutional, population ecology theories). However, there was also a whole range of activities aimed at developing, clarifying and establishing the strategies. These *learning dynamics*, including various *knowledge-assimilation practices*, informed and developed the strategies and were aimed at achieving specific purposes inherent in them.

of perceiving that they actually were approaching the end of strategy development and that the strategies were well defined at that stage.

The assimilation and interpretation practices provided information for and developed the strategies of Ericsson, Pharmacia & Upjohn, AGA and Couplet over time. The companies themselves, not merely external forces, radically changed their strategic aims and strategy content. It is evident that the activities in the *creative motors* primarily concerned investigating the environment and the actors in it, rather than isolating the company from it. Individuals and groups of actors were quite proactive in acquiring knowledge about the circumstances surrounding the strategic puzzles in each of the cases. They focused on strategies outside the company's traditional businesses, and they actively tried to locate various pieces in order to obtain a fuller picture of the strategies. These were the kinds of *creative learning dynamics* that generated the strategies.

These observations seem contradictory to many organizational-change theories. However, the different characters of the two strategy motors, outlined in the previous chapter, can partly explain this. At the same time as more peripheral parts in the creative motors very actively moved the strategy forward and had a specific purpose, there were others who opposed it. Organizational inertia, slow change (Hannan and Freeman, 1977), and buffering (Galbraith, 1974; Thompson, 1967) were present in the *adaptive motors*. This organizational core was particularly resistant to change (cf. Hannan and Freeman, 1984). Similarly, institutional pressure and institutional isomorphism (Meyer and Rowan, 1977, Scott and Meyer 1983) seemed to play a role, mostly in the adaptive motors. *It can be established that a limited part of the companies exhibited the resisting, passive and solely adaptive behaviour depicted in many organizational-change theories, namely in the adaptive motor.* In each company there was initial opposition from corporate or senior management against determining and solving the strategic puzzles. Here *adaptive learning dynamics* were present to a greater extent.

In general it was quite difficult to discern a specific pattern of environmental influence on the organization as depicted in organizational-change theories (i.e. contingency, institutional theories), since a whole range of various environments were involved in each case. The environments were geographically, technologically and in other aspects quite diverse. AGA handled over ten new and diverse markets in their strategy process. Couplet had to cope with hydraulic pump, electronics, hydraulic oil,

sensor devices and general trailer surveillance technologies and industries in theirs. Ericsson was forced to coordinate various technologies ranging from cellular planning through digital switching to consumer electronics and adapt to various conditions in their over 140 geographical markets. Similarly, Pharmacia & Upjohn had to manage an increasing number of markets, ultimately over one hundred. Given this situation, it was impossible to define a common pattern regarding the relationship between the environment and the organization.

In summary, it seems as if strategy process developed hand in hand with strategy content. There was a difference between the strategy formation processes in the two motors and between their views on strategy content. Adaptiveness, inertia, perceptions and rationality varied between the adaptive and creative motors. The position taken towards the strategic puzzles seemed not to be independent of the processes and the learning dynamics. In other words, *the view of the strategic puzzle in each motor was partly a function of the character of the strategic process involved*. Externally oriented knowledge mechanisms in the creative motors, rather than external pressure, played the pivotal role in developing the strategies.

It is clear that processes and alternative learning dynamics of peripheral actors in the creative motors were crucial in the cases. These actors aggressively developed and created the strategy through *probing the environment and building external networks*. The observations do not necessarily contradict or disprove organizational-change theories. On the contrary, they show that these might be appropriate regarding the adaptive motors, but not as relates to the creative motors and strategy creation. The findings stress the necessity to link strategy formation theories to what strategy is about, strategy content, and to recognize more purposive and proactive change processes. Once again, however, it is important to emphasize that contingency, population ecology, and institutional theories, among others, have not been designed specifically to analyze individual management and strategic behaviour and strategy-making in diversified corporations. At the same time, they are highly influential theories and are often used as a basis for explaining organizational and strategic change. This evaluation shows that there are limits to their explanatory capacity in regard to strategy creation.

8.3.3 Strategy Creation and More Dynamic Process Perspectives

It was observed in the last section that the companies involved did not show the adaptiveness and passiveness outlined in many organizational-change theories. At the same time as the *adaptive strategy motors* exhibited a more passive and adaptive character, the *creative motors* were involved in various activities aimed at actively influencing the external and isomorphic forces and the criteria for them, rather than only adapting to them. *These activities primarily concerned investigating and probing the environment, rather than isolating the company from it.*

Individuals and groups of actors in the creative motors were quite proactive in seeking knowledge about the circumstances surrounding the strategic puzzles. They actively tried to locate various pieces in order to receive a fuller picture of the strategies. Managers learned about, managed and made choices concerning the strategic puzzles. They were able to adapt to and alter the environment. This more proactive attitude, with active roles for managers and organizations, is recognized in some organizational-change theories such as the neocontingency perspectives (Miles and Snow, 1978) and in the resource dependence perspective (Pfeffer and Salancik, 1978).

Another way to cope with the environment in the cases was actively to influence outside actors that were putting institutional pressure on the companies. These activities especially concerned discussions with and efforts to persuade diverse governmental and regulatory bodies and were primarily conducted within the creative motor. For example, the smoking-cessation unit at Pharmacia & Upjohn assisted FDA (Federal Drug Administration) in designing regulations and requirements regarding smoking-cessation products, and SRA (later ERA) at Ericsson participated in establishing different mobile telephony standards together with various regulatory bodies.

This behaviour is quite consistent with another, more dynamic view in organizational theory, the institutional perspective interpreted in terms of strategic responses (Oliver, 1991, 1997). The neocontingency, resource-dependency and strategic-response views of the institutional perspective offer promising explanations as to how strategic change develops. *They need to be complemented, however,*

regarding the details and microactions of strategic management practice, specifically how strategy process is linked to strategy content. There is a need to understand specifically how organizations and managers act proactively in relation to the organizational environment.

Despite the proactive attitude and behaviour, it is clear that there were cognitive limits involved in the strategy processes. *These cognitive barriers contributed to the incremental character of the strategies; however, they differed considerably between the two motors.* Furthermore, some cognitive interpretations enhanced the maneuvering possibilities of the companies rather than impeding them. The way in which the two motors and groups acted to shape their environment and the character of their collective cognitive structures seemed to differ substantially. For example, there were clear differences between how the creative strategy motor in the Radiocommunications unit, or SRA, at Ericsson envisioned the mobile telephony business and the way in which the Public Telecommunications division and corporate management regarded that business. SRA perceived it as a business that might replace the traditional wired telephony on a grand scale. Corporate management, by contrast, understood the business as one that perhaps might develop for a limited upscale segment. Similar differences between the creative and adaptive motors were observed in the AGA and Pharmacia & Upjohn cases and in the single in-depth study of Couplet.

The two motors actively created the pieces of their own strategic puzzles. They acted to shape their environments or produced their own environments (Starbuck, 1983; Weick, 1977; 1995).¹⁸⁵ It is also true, though, that the complexity which surrounded the strategic development processes influenced and constrained the managers and companies involved. Thus, both forces of simplification and forces of constraint seemed to be at work simultaneously: "People create their environments as those environments create them" (Weick, 1995, p. 34). *However, the question is how people and organizations create their environments, what specific mechanisms of*

¹⁸⁵ As with organizational learning in general, it is recognized that collective cognitive or managerial frameworks can be questioned and are subject to debate. This was discussed earlier in Section 6.5. The position taken here is that the more social interaction and transmission between individuals are emphasized as important for individual learning and cognition in organizations, the closer an explicit acceptance of organizational level learning and frameworks (cf. Levitt and March, 1988; Hedlund and Nonaka, 1991; Kogut and Zander, 1992; Spender 1993; Crossan et al., 1999).

assimilating and interpreting information are involved and how they link to certain strategy views and outcomes - in short, how strategy process and content are connected.

It is clear that the strategies of Ericsson, Pharmacia & Upjohn, AGA and Couplet involved a *purpose and logic* based on the proactive character of the creative motors. The focus in the creative motors was to solve the puzzle, to reveal yet another part of the puzzle or strategy, to determine the strategic aim or content and then to follow it. First some pieces revealed a certain pattern; then the strategy began to follow the pattern; then some additional pieces disclosed more and the strategy took another turn. In this sense strategy process and content evolved together. There was no clear "grand strategy" from the start. Each new piece of the strategic puzzle took the strategy one step further ahead.

The companies had a rather clear picture of the entire strategy content towards the end, but there were fragments of this final strategy that had directed them from the very beginning. Ericsson's, or rather SRA's, first small steps in mobile systems and telephones had an objective and constituted an effort to disclose the first parts of the strategic puzzle. The objective was to find out more about mobile or cellular telephony and especially to be able to sell some parts of these systems. From the initial aim to sell mobile telephone stations or telephones, the process led to further steps to solve the strategy puzzle; these took the company in other directions, into mobile systems and then later into telephones again.

The same applies to the initial steps of the other companies, which also had a particular aim outside the prevailing strategy content - although no single step was intended to position Ericsson as the global leader in mobile systems and telephones or Couplet as a global trailer surveillance systems company or Pharmacia & Upjohn's Consumer Healthcare Division as one of the world leaders in its field. Thus, the ideas and visions were distinct from the start, but they evolved and changed.

These observations are in accordance with purposive strategy-formation perspectives (e.g. Mintzberg and Waters, 1985; Pettigrew, 1985a; Quinn, 1980). However, *the challenge is to determine how the purpose, logic or content specifically comes about, to specify the connection between strategy process and strategy content.* The strategy-content question and how it develops needs to be considered and

determined in these views. Often the content of strategy is somehow presumed to evolve automatically from the emergent process. In many purposive strategy-oriented writings (e.g. Mintzberg and Waters, 1985; Quinn, 1980), a purpose is presupposed to be ingrained in the strategy process, but it is unclear explicitly what the underlying logic is or how it works. It is acknowledged that there is a logic in the sense that managers deliberately try to formulate a strategy over time in a process based on analysis as well as more experimental actions, but *it is not clear how the purpose or content of the strategy in itself develops*. The theories do not explicitly take into account the objectives and specific actions of the actors involved or how they work to clarify the strategic issue, puzzle or content. *What seems to be lacking is theories about how managers determine and learn about the strategic puzzle or content:*¹⁸⁶ *Since the learning dynamics and the cognitive barriers - as well as the strategy conclusions and outcomes - in the two strategy motors differed, it might be suggested that the motors could assist in filling this gap regarding the strategy process – content relationship.*

Besides assisting in clarifying the strategy process – content relationship, the identification of the two strategy motors might possibly resolve the confusion and contradiction between *revolutionary* (e.g. Miller and Friesen, 1984; Mintzberg, 1978) and *evolutionary* (Quinn, 1978; 1980) models of strategic change. On the one hand, there did not seem to be some undefined purpose and pattern that one day simply turned into radical strategic changes (e.g. Miller and Friesen, 1984; Mintzberg, 1978), but on the other hand, there appeared to be more than an incremental revelation of a purpose and strategy as depicted in some other purposive strategy-formation writings (e.g. Quinn, 1980). *In fact, it seemed as if the strategies developed incrementally within the creative motor, but it was within the adaptive motor that radical corporate strategic change finally was determined.*

¹⁸⁶ The gap regarding the content – process connection is recognized within the purposive strategy-process perspectives themselves : "...we would like to know more about how managers track the realized strategies of their own organizations" (Mintzberg and Waters, 1985, p.272).

8.3.4 Summary and Conclusions

The observations in the single in-depth and multiple retrospective case studies confirmed some of the prevailing explanations of strategy making and strategic and organizational change. AGA's resources and prior capabilities were of course crucial in its entry into the Eastern European industrial gas industry. Industry factors such as acquisitions and subsequent industry concentration played a certain role in the creation of Ericsson's strategy. In addition, it was possible to identify some important industry and resource factors after the strategies had been established in these two cases and in the strategy-creation processes of Couplet and Pharmacia & Upjohn. Planning was present in AGA's adaptive motor and at the end of the processes in the adaptive motors of Ericsson and Pharmacia & Upjohn as well. Otherwise the character of the strategy processes was more that of purposive strategy formation. The companies encountered substantial external resistance and exhibited internal inertia, as depicted in certain theories of organizational change. In brief, theories of strategic and organizational change seem partly capable of evaluating and explaining strategy creation. *However, what stands out most in the observations and the examination of the strategies which were studied is that they had several characteristics that appear to challenge many views in theories of strategy content and strategic and organizational change.*

First, in contrast to the explicit or implicit planning views of strategy content, *the strategies developed incrementally and from the periphery of the companies*, with planning and implementation essentially co-evolving. Second, collusive behaviour, forces of concentration and entry barriers seemed to play a limited role in the initial development of the strategies. Instead, *external networks in related and completely different industries were important*, and in the end industry borders were changed and entirely new industries created.

Third, external resources, outside the companies' own resource spheres, played a central role in the development of strategy. *The combination, coordination and integration of external resources and industries were decisive for strategy content.* Fourth, there were *two distinct strategy motors behind the strategy*. One of these, the creative motor, exhibited a purpose from the outset and successively developed the strategy, which became core strategy via the adaptive motor in the end. This

development is in contrast to the strategy process literature, which emphasizes a single process and either the incremental revelation of a purpose (e.g. Quinn, 1980) or a sudden change in the end (e.g. Miller and Friesen, 1984; Mintzberg, 1978).

Fifth, *the creative strategy motors actively probed the environment and, coordinated and combined external and internal knowledge.* In opposition to many theories of organizational change, the creative strategy motor showed an extraordinary ability to develop strategies forcefully through various learning dynamics involving different externally directed knowledge-assimilation practices, despite limiting environmental factors. *Most of these contradictions with prior strategy and theories of organizational change relate to their absence of connection between strategy content and strategy process and can be explained by the fact that two separate strategy motors were involved.* In strategy creation the content – process connection becomes particularly obvious. It was clear in the observation of the two motors that strategy content and strategy process were intimately connected to each other. Different strategy processes and knowledge-assimilation practices in the two strategy motors seemed to produce different actions, results and conclusions regarding strategic direction. In particular, the two strategy motors seem to be important components in analyzing and explaining strategy creation, and they will be examined further in the upcoming chapters.

From the observations in the single in-depth and multiple retrospective case studies and the examination of contemporary strategic- and organizational-change theories in Chapter Five and Six and in this chapter, it can be concluded that alternative theories to the established ones need to be considered when examining and explaining strategy-creation and strategy-making involving complex foresight horizons. *The established strategy-content theories did not seem entirely applicable, since industries and resources outside pre-existing ones appear to have played the pivotal role. On the other hand, when evaluated against the observations in this study, established views of strategy and organizational change seem to exaggerate the conception of a single strategy process limited by external factors.* In contrast to some of these prior models of strategic management, the cases involved strategy creation based on external resources and industries driven by active, externally oriented

knowledge-assimilation practices. Strategy creation was based on integration and new combinations of resources and capabilities from diverse sources and industries.

Important in determining how strategy content is linked to strategy process is the observation of the two strategy motors and their *different learning dynamics*. As discussed in the analysis of the strategy processes in Chapter Seven the motors relate to Schumpeter's (1947) adaptive and creative responses towards economic change. Adaptive response refers to changes within the bounds of existing traditions and practices, while creative response pertains to solutions outside of the existing range of practices.¹⁸⁷ Since the inherent process of each motor differed, and the two motors resulted in different conclusions regarding the strategy puzzle, the duality indicates two processes of a different character and of a different outcome. *This implies that strategy content is not entirely independent of strategy process. The difference between the motors in terms of learning dynamics, the ways of assimilating and interpreting information, or ways of learning, could be a key link between strategy content and process.*¹⁸⁸ Close investigation of the two strategy motors might uncover some details regarding the strategy content – process relationship. The creative and adaptive learning dynamics and their influence on strategy creation are discussed next.

8.4 Coordination and Combination of Knowledge: Learning Dynamics and Paths of Strategy Creation

The earlier literature survey and the findings in the single in-depth and multiple case studies indicate that theories of strategic and organizational change need to be complemented in regard to strategy creation. Alternative theories, levels of analyses and concepts of rent need to be considered in an examination of strategy creation and change. In particular, the analysis of the single in-depth study and the initial analysis of the multiple retrospective study shows that various forms of learning or ways of

¹⁸⁷ The observed dual character of strategy-making, the adaptive versus creative strategy motors, has previously been discussed in strategy-process research by Burgelman (1983a, 1983b, 1991), who has identified "induced" and "autonomous" strategy types.

¹⁸⁸ Learning is also recognized as important in the development of the purposive current of research on strategy formation : "...the whole question of how managers learn from experiences...seems to be fertile ground for research" (Mintzberg and Waters, 1985, p.270).

coordination and combining knowledge (acquiring, generating and assimilation knowledge) are of importance in strategy creation. This suggests that organizational learning are of importance. The study relies on the notion that organizational learning could be interpreted as something more than the aggregate of individual learning as discussed in Chapter Six. Social interaction and transmission between individuals are important factors in the process of organizational learning.

In the study *learning* is treated as a process and metaphor rather than as an outcome and particularity. Learning as a process refers to the assimilation of knowledge that induces changes of action, positive or negative, while learning as an outcome refers to positive effects of action (March, 1994). Learning in this context is not necessarily "rational" or conscious, but might have other, more "irrational" and haphazard characteristics. Furthermore, learning is used more as a metaphor, including various learning processes and practices rather than as referring to the particular process of experiential learning. It might be more appropriate, albeit less convenient, to use "knowledge action and generation mechanisms", "knowledge assimilation and judgmental decisions" or "knowledge-assimilation practices and changes in collective cognitive structures" instead of simply "learning."

The observations in terms of the two different strategy motors, including different learning dynamics, are discussed in relation to some recently presented strategic management views in this section. It concludes with a model of different paths of strategy creation.

8.4.1 Learning Dynamics and Recent Views on Strategic Management

The observations in the study illustrate the distinct character of strategy creation. The findings indicate that strategy creation involves an entirely different logic from that normally discussed in strategic-management theory. It is concerned with creating new combinations of knowledge, resources and capabilities in completely new relationships. Prior research on strategic management and strategy content appears to focus more on *adaptive forms of strategy-making*. The learning dynamics in the *adaptive motors* involved *coordination and integration of knowledge based on the prevailing industry and resource positions*. It seems as if strategy-content theories

have exaggerated this type of strategic expansion within current industry boundaries and growth on the basis of existing resources and capabilities. These are of course conceivable paths for strategy, but they underestimate paths external to these domains. In the single in-depth Couplet case, strategy-creation and growth occurred in an entirely new product area and, in terms of technology, a completely new industry. Furthermore, growth was not primarily resource-based, since the company did not possess any of the core technologies. In other words, none of the traditional content theories seemed fully applicable. Strategy creation was based on the learning dynamics of the *creative motor*, involving *coordination and combination of knowledge into entirely new knowledge*.

Ex post it was possible to describe how the industry structure changed and certain resources and capabilities had become important. However, this does not explain Couplet's strategic management in terms of strategy-creation. The outer context was dominated by true complexity in technological, market and legal terms. Internally there was genuine uncertainty and no strategy content; rather, the company was facing a puzzle, one that was not even defined as "strategic". The inner context consisted of the two diverse and opposing strategy motors, the adaptive motor and the creative one. The strategy motors included various knowledge-assimilation practices and conflicting interpretations of the puzzle. In this setting, Couplet initially exhibited inertia via the adaptive motor, but subsequently the creative motor actively penetrated and interacted with the environment.

Relations with customers and their knowledge bases played a significant role in this process. Couplet probed into the complex environment, learnt about it, built up resources and capabilities and positioned itself in the end as a global leader in a truck trailer-control and surveillance industry. Contrary to strategy-content explanations, strategy-making was based on new combinations of resources outside the company and on privileged access to customer knowledge. The entrepreneurial combination of external resources and the interaction with customers, primarily Roadstar, provided for strategy-creation. *Strategy creation was customer- and entrepreneurship-embedded more than industry- or resource-embedded.*

The other cases showed a similar pattern. Externally directed knowledge-assimilation practices, including informal scanning, diverse experiments and a

subsequent acquisition and creation of resources and capabilities, were decisive in the cases. Thus, entrepreneurial activities in terms of actively discovering, creating and combining knowledge from various sources drove the strategies. Even in the AGA case, where the existing resources were crucial, and in the Couplet case, where former customers were of importance, an equally pivotal role was played by practices of knowledge-acquisition via external networks for the purpose of integration and combination of knowledge. *In fact, coordination, integration and combination of resources and skills played an important part in all strategy processes.* In the Ericsson and Pharmacia & Upjohn cases, these kinds of factors played the dominant role. There were no specific resource or customer bases to build on in those cases.

The findings in the single in-depth and multiple retrospective studies are substantially consistent with two alternative views of strategic management presented recently, the *dynamic-capabilities view* (Teece, Pisano and Shuen, 1997) and the *relational view* (Dyer and Singh, 1998). The process of incrementally building resources and competitive positions rather than choosing among given resource and industry positions determined the manner of strategy creation. *It included linking to external resources and capabilities, outside the realm of the MNC and its industry, coordinating with them and transforming them.* Knowledge-assimilation practices, or learning, were significant in this process.

Many of these findings are consistent with the organizational and managerial processes described by Teece, Pisano and Shuen (1997) in their *dynamic-capabilities view: the processes of coordination/integration, learning, reconfiguration and transformation.* The importance of external *integration and coordination* of various resources and competencies was observed in the Couplet, Ericsson, AGA and Pharmacia & Upjohn cases. It was established in the analysis that various *learning dynamics*, including knowledge-assimilation practices, seem to determine how the strategies are understood and developed, in the adaptive and creative strategy motors. In terms of reconfiguration and transformation, there was a *reconfiguration* of the asset structures in all companies. In other words, *the observations that companies probed the business environment, and that they acquired, integrated and combined resources and capabilities in external networks, are quite compatible with the dynamic-capabilities view.*

The emphasis on external networks fits the *relational view* as well (Dyer and Singh, 1998). The relationships between the companies and external actors were important in the development of the strategies. *The resources and capabilities created were embedded in interfirm and intergroup resources and competencies.* However, there is an important difference compared to the relational view: while prior customers played an important role in the case of Couplet, external inputs in that case, as well as in the others, were less related to actors within the existing industry than to actors in other industries and external consultants and individuals. The reason was that the new industries "to be" had simply not been formed at the outset of strategy creation. There were no natural industry partners or alliances. This situation contrasts with the premises of the relational view, which seems to refer primarily to existing trading partners. The relationships observed in this study did not so much involve prior and present suppliers or competitors as the creation of entirely new relationships outside or at the periphery of the industry.

For the same reasons that the findings are partly at odds with the relational view, they also do not correspond entirely to several network views (e.g. Nohria and Eccles, 1992). Network perspectives seem to be primarily concerned with supplier relationships (e.g. Håkansson and Johansson, 1987; Johansson and Mattsson, 1988), competitor relationships or outsourcing within existing industry borders.

8.4.2 A Framework of Strategy Creation Paths

The findings indicate that knowledge-assimilation practices which probe the environment and integrate and combine internal and external resources and capabilities provide a foundation for strategy creation - either solely, or through a shared base in external resources or together with customers. It seems as if there are *different strategy-creation paths depending on differences in learning dynamics or in mechanisms of coordinating and combining knowledge.* It might be suggested that *strategy creation is a function of creative learning dynamics, either solely or in combination with adaptive learning dynamics.* Adaptive learning dynamics operate within traditional industry borders and are *industry-embedded*. Resource and customer bases in the adaptive motor might, however, in combination with creative learning

dynamics, generate *resource- and customer- embedded strategy-expansion paths*. In these paths, prior resources or customer knowledge are coordinated and combined with entirely new knowledge. Creative learning dynamics, coordination and combination of knowledge into entirely new knowledge, represent an *entrepreneurship-embedded path of strategy development*.

Industry- and resource-embedded paths have earlier been discussed in strategy-content theories (IO and RBV), but the *customer and entrepreneurship-embedded paths of strategy creation* have not previously been explicitly discussed. Given the suggested focus on entrepreneurial rents rather than monopoly and Ricardian rents, *entrepreneurship-embedded strategy-creation* implies entry into new markets which match the entrepreneur's or firm's new combination of resources or new insight into this combination. Similarly, *customer-embedded strategy-creation* implies entry into markets which match the entrepreneur's or firm's privileged access to customer knowledge and needs (cf. Zander and Zander, 1999). In that case rents are returns arising from this privileged access. The different paths of strategy creation and expansion are illustrated below in terms of Ansoff's (1965) product/mission matrix (see Figure 8:1).

	Product		
		Present	New
Customer			
Present		Industry embedded (adaptive)	Customer embedded (adaptive & creative)
New		Resource embedded (adaptive & creative)	Entrepre- neur embedded (creative)

Figure 8.1: A framework for strategy creation.

In brief, strategy creation can be explained in terms of privileged access to knowledge because of an existing resource and capability base or including the base of a

customer. Furthermore, privileged access can be gained through mechanisms of knowledge-assimilation and generation in general, without any base in existing resources or customers. The various paths reflect the firm's privileged access to customers, resources and/or the firm's new combinations of resources and capabilities via external and peripheral networks. In this respect they reflect different conditions for knowledge-assimilation or learning as well. In *customer-embedded* strategy creation, technologies and products are the most uncertain factor, while there is a certain stability in regard to customers, who can thereby provide a base for knowledge assimilation, or learning. In the *resource-embedded* case it is primarily market aspects that are unpredictable, while resources are clearer and thus constitute the base for learning. The third path is purely *entrepreneurship-embedded*; the product and the technology as well as the customers are uncertain and ambiguous. In this "purely" entrepreneurial path, knowledge-assimilation and learning take place entirely through external networks. The division presented also reflects strategy-formulation, as opposed to strategy-formation, aspects, with industry-(formulation) and entrepreneurship-(formation) embedded paths as the two extremes and the other paths as a mixture of the two.

The *framework of strategy-creation paths* specifies various strategy paths in terms of contemporary strategic management theory: IO and RBVs (i.e. industry- and resource-embedded paths). In addition, these paths are complemented with two alternative forms of strategy-making, customer- and entrepreneurship-embedded strategy paths. In particular the framework distinguishes between *two generic forms of strategy*. One is *purely adaptive* and, accordingly, is based on the *adaptive motor* and conducted within the realm of existing industry practices – *the industry-embedded path*. The other is *purely creative* and conducted outside existing industry, customer and resource practices in the *creative motor* – *the entrepreneurship-embedded path*. This indicates that the *strategy creation paths are functions of the strategy motors and their respective learning dynamics and knowledge-assimilation practices*.

The two remaining paths are combinations of these two. One is based on existing resources in the *adaptive motor*, but it involves new applications of those resources via coordination and combination of knowledge in external networks in the *creative motor* – *the resource-embedded path*. The other is based on current

relationships with customers in the *adaptive motor*, but it involves the development of new products for and in cooperation with those customers and others in external networks, also in the *creative motor – the customer-embedded path*.

The industry-, resource- and customer-embedded paths all involve path dependency and potential risks of being locked into, trapped in, a certain kind of strategy. This point has previously been illustrated for each of them, in terms of industry or market myopia (Levitt, 1960), resource or core-competence rigidities (Leonard Barton, 1992) and the risk of being held captive by customers (Christensen, 1997). On the other hand the entrepreneurship-embedded path is no guarantee of success; returns on more experimental and entrepreneurial activities are clearly less certain than further development along the industry-, resource- or customer-embedded paths. In addition, there is a risk of becoming trapped in exploration and innovation. Exploration often leads to failure and failure tend to induce exploration, which lead to even more exploration and so on (March, 1994). This balance of exploration/exploitation observed in between the creative and adaptive motors has been reflected in many theories of organizations and firms in the past (Holland, 1975; March, 1991, 1994; Penrose, 1959; Schumpeter, 1942; Wernerfelt, 1984) and will be discussed in detail in relation to each strategy motor in the following chapters.

In summary, strategy creation and expansion can be explained in terms of privileged access to knowledge arising from an existing resource and capability base or a customer base. Furthermore, it can develop solely through exploratory knowledge-assimilation aimed at integration and transformation in external networks without being based in resources or customers. Depending on the principal learning base, the strategies develop along various paths. Couplet's strategy-creation process was primarily customer-based. Strategy-creation was a function of privileged access to customers and coordination, integration and knowledge-assimilation practices in external networks. Strategy creation at AGA primarily involved resource-embedded learning combined with coordination, integration and learning in external networks, while the strategy-creation processes at Ericsson and in Pharmacia & Upjohn were based purely on these latter mechanisms and were thus entrepreneurship-embedded. The cases are outlined in the strategy-creation path framework below (see Figure 8.2).

Product		Present	New
Customer			
Present			Couplet
New		AGA	Pharmacia & Upjohn Ericsson

Figure 8.2: Strategy-creation paths at the different companies.

The analysis and evaluation of the single in-depth and multiple retrospective case studies essentially illustrate the anomalies mentioned in the introduction. The strategies did not emanate from the centres of the firms, not from core actors or competencies and resources and not from the central positions of these firms in their industries. Instead, they developed from the periphery and border of the organizations and industries. External networks, linkages and externally oriented knowledge-assimilation mechanisms were decisive factors in strategy process. External resources and industries, outside the traditional resource and industry spheres, were central in determining the strategy content. *The alternative paths of strategy-creation - customer- and entrepreneurship-embedded paths - have not been captured earlier, since strategy-content and strategy-process research have essentially developed separately. Once strategy content and strategy process are combined, it is evident that strategy-creation and new industry and resource positions might emanate from peripheral organizational sections, from relations to customers, from other industries and from external resources.*

8.4.3 Summary and Conclusions

It can be concluded from the reasoning in this chapter that alternative theories should be considered when examining strategy creation and change. The findings in the

single in-depth and multiple retrospective case studies indicate that strategic management theory needs to be complemented in respect to strategy creation. Alternative concepts of rent, levels of analyses and conceptions of process need to be considered.

In view of the complexity of strategy-creation, the existence of a variety of theories is probably beneficial. It is through integration of more dynamic economics-based perspectives and behavioural and cognitive views of strategy formation that strategy-creation and strategic management theory can make progress.

Schumpeterian economics seems more relevant than earlier currents in economics-based strategy research, since creation, discovery and entrepreneurial rents emanate from uncertainty and complexity. In addition, economics-based views need to be complemented with other social sciences. This statement seems especially relevant to strategy creation and change, since organizational and individual beliefs and values, perceptions, and knowledge play an important role. Researchers in the economics-based tradition seem to share this view as stressed in Chapter One: "Where the coordination and accumulation of knowledge is key, and where patterns of belief and attitude are important, other disciplines will have more to say." (Rumelt et al., 1991, p.27).

More dynamic resource-based views offer an opening for other disciplines and the potential for a "merger" between economics and behaviourally oriented strategic-management research, since they recognize, some more than others, that the characteristics of strategy processes and strategic-management practice make a difference for the outcome, or strategy content. Research on strategy-creation can make progress in the intersection between the economics-oriented, dynamic resource-based models, emphasizing the mechanisms of capability creation, and the behaviourally based organizational learning models, focusing on the firm as a cognitive entity.

This approach might seem overly eclectic. However, at this preparadigmatic stage in strategic management research, especially in respect to strategy creation and the relationship between strategy content and strategy process, and because the area by definition is an applied one, concessions must be made to realism. Moreover, these perspectives have a common denominator in that they all involve aspects of organizational learning as discussed in Chapter Six. Various organizational learning

mechanisms seem especially appropriate in examining strategy creation. The observed difference in terms of learning dynamics and knowledge-assimilation practices between the adaptive and creative motors provides a promising foundation. The fundamental difference in process and other characteristics between the two motors distinguished the two poles in strategy-creation paths as described above: the industry-embedded path or state, dominated by the adaptive motor, and the entrepreneurship-embedded path, dominated by the creative motor in this respect.

The classification of various strategy-creation paths illustrates a connection between strategy process and content - the nature of strategy content depends on the character of the process, on whether the strategy motor is adaptive or creative, on the inherent learning dynamics of each motor and on the dimension - resources or customers - on which the motor is based. This strategy process - content relationship needs to be examined and explained more thoroughly if strategy creation is to be fully understood.

A further exploration and analysis of the adaptive and creative motors and, in particular, their inherent learning dynamics are provided in the next two chapters. The two motors are carefully described, contrasted and analyzed. The forces driving the strategy-creation paths, the adaptive and creative strategy motors and their inherent knowledge-assimilation mechanisms are examined in greater depth. An illustration of the two strategy motors in each case is provided, together with an analysis of their disparate characters and possible reasons for the difference between them. In Chapter Nine the creative strategy motors are described and the specifics of their knowledge-assimilation mechanisms are outlined. In Chapter Ten the adaptive strategy motors are described and, similarly, their knowledge-assimilation practices are examined. In addition, collective cognitive frameworks, or structures, and barriers to strategy-creation are analyzed.

Chapter 9

THE CREATIVE STRATEGY MOTORS

9.1 Introduction

The examination of the cases in the multiple retrospective study verified earlier observations made in the single in-depth case study. There was *complexity* in the outer contexts, strategy contents were basically *strategic "puzzles"* and the inner contexts were divided in *two sub-processes*: one *adaptive* and one *creative strategy motor*. The strategy motors appeared to include various *learning dynamics*, involving diverse *knowledge assimilation practices* and *cognitive structures*.

Besides these general characteristics of strategy-creation, various *strategy-creation paths* were identified in the prior chapter. Two alternative strategy-creation paths, besides traditional *industry-* and *resource-embedded* ones, were identified: *customer-* and *entrepreneur-embedded* strategy-creation, anchored in diverse learning dynamics. Strategy development at Couplet was identified as a customer-embedded strategy-creation path, while at AGA it was characterized as a *resource-embedded* strategy-creation path. At Ericsson and Pharmacia & Upjohn, strategy development was identified as a purely *entrepreneur-embedded* strategy-creation path.

The two strategy motors identified in the single in-depth and multiple retrospective studies seem to explain some of the contradictions in strategic-management and organizational-change literature as regards strategy development and creation, such as the co-existence of inertia and lack of a particular purpose (in the adaptive motor), and proactive action and specific objectives (in the creative motor). At the same time the division into two separate strategy motors raises questions regarding its specific characteristics and its influence on the development and of strategy. In this chapter and the next, a more thorough examination of the two strategy motors and its characteristics is provided. It is an investigation into the origins, drivers and barriers of strategy-creation and strategy with complex foresight horizons, and

also into the learning dynamics involved in terms of coordination and combination of knowledge.

In this chapter the creative motors are described and its process characteristics analyzed. This review is followed by a more detailed analysis and discussion about the general characteristics and, in particular, the inherent knowledge-assimilation practices of the two motors. In the next chapter the adaptive motors are described and analyzed, and collective cognitive structures are examined. That chapter also includes a discussion and analysis regarding the interaction between the motors. The strategy processes in the two motors are characterized in terms of the two ideal types of processes shortly discussed in Chapter Seven, a *life-cycle* and a *teleological* process type. The descriptions build on Van de Ven and Poole's (1995) categorization of ideal types of processes and will be discussed more in detail in the analysis of each strategy motor.

9.2 The Creative Strategy Motor – a Life Cycle Process

The creative strategy motors had a distinct character. The start-up phase involved a more or less vague idea or discovery and the identification of a "puzzle". The next stage consisted of framing the puzzle in more strategic terms and the initial actions required to reveal and solve it. Then the strategic puzzle was refined and developed. Finally it changed the direction of corporate strategy.

The description of the motor chosen here corresponds to a *life-cycle* ideal-type process (Van de Ven and Scott Poole, 1995). The life-cycle process fundamentally includes four stages: *start-up*, *grow*, *harvest* and *termination*. Below follows a description of each life-cycle stage in each creative strategy motor in the multiple retrospective study. Each individual cited is listed in Appendix B in terms of company, position and section of company. The descriptions are followed by a closer examination of the characteristics together with an analysis of the learning dynamics involved in terms of knowledge-assimilation practices. Tables 9:1. provide an overview of each strategy-creation motor in the multiple retrospective study and the single in-depth study, respectively.

<i>Multiple retrospective study</i>	<i>Location</i>	<i>Main idea & vision</i>	<i>Strategic puzzle</i>	<i>Start-up</i>	<i>Grow</i>	<i>Harvest & Terminate</i>
Ericsson	Radio Com. division, SRA/ ERA	"Eliminate the wire from regular telephony"	Mobile Telephony/ Mobile Communic. Systems	Trying to sell mobile telephony: the world's first in Saudi Arabia. (9.3.2)	Internatl expansion: the rest of Europe and the US. (9.3.3)	Global expansion and entry into mobile telephones. (9.3.4)
Pharmacia & Upjohn	Smoking cessation and OTC units	"Market a smoking cessation product" and "Extend the life cycle of pharmaceuticals"	Consumer Healthcare/ Smoking Cessation	The world's first smoking cessation product – Entering the Swedish, European and the US markets. (9.4.2)	Expanding into more markets and more OTC products. (9.4.3)	A global smoking cessation brand and development of other global OTC brands. (9.4.4)
AGA	Eastern European Team & Skunkwork, local subsidiaries	"Enter Eastern Europe and regain old market positions"	Eastern European Business/ Eastern Europe	Looking into Eastern Europe: entering East Germany and Czechoslovakia. (9.5.2)	Expanding into Poland, the Baltic states, Kaliningrad, Russia, etc. (9.5.3)	12 Eastern European markets and counting... (9.5.4)
<i>Single in-depth study</i>	<i>Location</i>	<i>Ideas & visions</i>	<i>Strategic puzzle</i>	<i>Start-up</i>	<i>Grow</i>	<i>Harvest & Terminate</i>
Couplet	Engineers, Technical Department, New President	"Market a European hydraulic non-mechanical system and provide trailer surveillance systems products"	Non-mechanical coupling systems/ Trailer surveillance systems	Examining the potential and technology of non-mechanical coupling systems. (4.2.4 – 4.2.8)	Developing and marketing the Mini coupling. (4.2.4 – 4.2.8)	Expanding globally and into new trailer surveillance systems products. (4.2.4 – 4.2.8)

Table 9.1: An overview of the creative motors and the life-cycle stages in the multiple retrospective study compared to the single in-depth study (numbers refer to sections in text).

9.3 The Creative Motor at Ericsson

9.3.1 SRA - an Autonomous and Self-reliant Company with a Vision

SRA was an autonomous and self-reliant company with a vision. Its focus was on radio products for military as well as civilian use (radio receivers, gramophones, TVs, radio systems for aviation and shipping, radar installations, etc.). From the early 1960's the company consolidated into communication and military radio equipment, leaving consumer goods. Its major business was in the military market, even if former President Ivar Ahlgren¹⁸⁹ had started to shift the focus to the civilian market. SRA led a rather languishing life as a radio communication supplier at that time and basically was an independent company, "not really a part of Ericsson" (Meurling and Jeans, 1994, p. 58). Åke Lundqvist became the President of SRA in 1977.

SRA's independence from Ericsson was not only due to its small size, unrelated technology and generally microscopic role in Ericsson, but reflected the fact that British GE-Marconi still owned 29% of the company. It was an autonomous subsidiary, not fully integrated into Ericsson. This fact later became crucial in the mobile telephony venture: "We did not have to make an intracorporate contribution, this was crucial for our investments, otherwise we would not have made it" [Åke Lundqvist, President of SRA at the time]. This independence was important for SRA's R&D ventures: "Due to financial independence, SRA could continue pursuing these R&D projects over time, without threats of cancellation, when they kept using money, year after year, without any profits." (McKelvey, 1997, p. 5).¹⁹⁰

Åke Lundqvist, who had an electrical engineering degree, had joined SRA in the mid-1960's and had been in charge of the land-mobile radio division since 1970 (Meurling and Jeans, 1997). He had been involved in mobile radio and mobile telephony since the end of the 1950's, when he worked for another company. He participated in the development of the Swedish mobile telephone system, MTB.¹⁹¹ SRA also had a history in this system since they supplied its base stations and telephones. Lundqvist had an early vision of the importance of mobile telephony, a

¹⁸⁹ Ivar Ahlgren was President of SRA between 1961-1977 (Meurling and Jeans, 1994, p. 58-59).

¹⁹⁰ Åke Lundqvist would like to correct the quote since there were profits, even if they were not substantial.

¹⁹¹ Åke Lundqvist was employed by AB Nordisk Teleproduktion and participated in the development of Televerket's MTB system (Mölleryd, 1996).

vision "based on radio technology, to eliminate the wire from the regular telephony" [Åke Lundqvist].¹⁹² At Ericsson SRA's vision was laughed at, and the company was considered a garage outfit, a "small bicycle repair shop" represented by "cowboys". "They were not really a part of us. They looked differently and behaved differently" (Meurling and Jeans, 1994, p. 59). As something of an independent "eccentric" in Ericsson, SRA could blossom out as an entrepreneurial driver in mobile telephony.

9.3.2 Start up: Trying to sell mobile telephony systems: the world's first in Saudi Arabia

The SRA President Ivar Ahlgren observed that international military spending was decreasing in the 1960's and adjusted SRA's strategy accordingly (McKelvey, 1997). Thus, SRA's overall strategy incrementally shifted, becoming more focused on civilian customers (e.g. pagers, mobile radio systems) from the mid- and late 1960's. However, there was no particular strategy for mobile telephony at the outset. Military applications still dominated and the main focus on the civilian side was on radio systems in general, including police, naval applications, etc. Production of military equipment was located in Stockholm, while civilian equipment was made in other parts of Sweden.¹⁹³ Although, SRA had delivered base stations and mobile telephones to the early mobile telephone systems in Sweden, MTA, 1956, and MTB, 1965, it only supplied telephones for the Swedish manual system of mobile telephony (MTD) during the 1970's (Mölleryd, 1996). Its radio base station technology was not considered advanced enough, although it did have some radio technology competencies in the area. For example, SRA made an important early contribution in emphasizing the choice of digital signaling in the NMT system, the latest mobile telephony systems, developed by the Nordic PTTs,¹⁹⁴ which increased subscription capacity compared to other alternatives (Meurling and Jeans, 1994).¹⁹⁵

SRA did not yet have its own base stations when the PTTs invited companies to bid on the NMT system in 1977. Instead it became a sub-supplier of a base station

¹⁹² In fact there is information that he already had this vision in 1968 (Mölleryd, 1996, p.38).

¹⁹³ Civil equipment was primarily produced in Kumla - Örebro and Gävle.

¹⁹⁴ NMT was entirely developed by the Nordic PTTs, but the industry was invited to do some studies.

¹⁹⁵ According to the chief engineer at the Swedish PTT, Åke Lundqvist's and SRA's ideas considerably improved the standard (Mölleryd, 1996, p.38).

control unit for Magnetic, a local Swedish radio technology firm, which supplied base stations to NMT. It did, however, deliver mobile telephones for NMT, but its technology in that area was inferior as well. SRA had succeeded in developing a mobile telephone, but it was not the latest technology. SRA managed to achieve more competence through the acquisition of Sonab in 1978. That company had a land mobile terminal that was upgraded to a mobile telephone. However, as SRA tried to get its first generation of mobile phones into production and market, the competitors were bringing out their second generation. "It was a mess...Quality was certainly not up to expectations...The competitors...were beating the hell out of Ericsson [SRA]" (Meurling and Jeans, 1997b, p.26)¹⁹⁶. Hence, SRA lacked base stations and had an inferior mobile telephone technology, even though the NMT process had been going on since 1970.

The President of SRA, Åke Lundqvist, was extremely enthusiastic about mobile telephony even if there was no specific strategy for it: "You cannot plan the future, it has to emerge somehow" [Åke Lundqvist]. He tried to convince the BX (Public Systems) division to offer the more advanced AXE switch for NMT. His enthusiasm and entrepreneurship also showed up in the deal with Saudi Arabia. In the end of the 1970's, while NMT was still under development, more PTTs started to show an interest in mobile telephony and asked for bids. This prompted Åke Lundqvist to take the initiative on a mobile telephony system in Saudi Arabia. Lundqvist suggested to Ericsson CEO Björn Lundvall: "Can't we try to sell a mobile telephone system to Saudi Arabia? They want the latest of everything else." (Mc Kelvey et al., 1997, p.28). However, Saudi Tel, Saudi Arabia's PTT, had not asked for a mobile telephone system in its request to Ericsson at all. Furthermore, SRA and Ericsson did not have a mobile telephone system to deliver. This was before the Nordic NMT system had been completed. They did not have a mobile telephony system and they did not even have the required products for its infrastructure. SRA did not have base stations, and it had only land-mobile radios, not phones. Ericsson did not have a switch adjusted for mobile telephony. However, Åke Lundqvist,

¹⁹⁶ Meurling and Jeans, 1997, p.26 is referring to Flemming Örneholm, newly appointed Marketing Manager for SRA in 1979.

together with Håkan Ledin, head of switching, who at the time actually believed a system already existed, sold a "system".

The first commercial cellular system in the world was delivered in 1981 to Saudi Arabia. The Saudi order included 8000 mobile stations,¹⁹⁷ which put pressure on production sources - there were no terminals left to sell in the Nordic home market. Competitors naturally exploited the situation. Furthermore, there were various important quality problems. Among other things, the telephone station keypads melted in the hot Saudi sun, and the armour-plated limousines and cars caused installation problems: "An un-biased observer might have referred to this situation as a disaster. Flemming Örneholm [SRA's Marketing Manager] certainly does." (Meurling and Jeans, 1997, p.24).¹⁹⁸

Besides SRA's radio technology competencies, one of its main resources at this time was entrepreneurial spirit and, perhaps, insight: "We had a vision to eliminate the wire in telephony, everybody laughed at us!" [Åke Lundqvist]. It is evident that Lundqvist and the SRA management had ideas about sell mobile telephones and, perhaps mobile telephony systems, even though they had neither of them. Mobile telephony was not part of the regular business of SRA, but it did figure in the 1980 annual report (LME, 1980) under the heading "Future Prospects": "...the Ericsson [SRA] corporation has a unique position, with the *possibility* to deliver complete [mobile telephony] systems" (emphasis added). However, at the outset the focus for SRA was on mobile telephones, not the systems. "Lundqvist's initial vision was to make telephones, they did not see base stations and switches as important." [Håkan Ledin, head of switching, later President of EIS – Ericsson Information Systems].

SRA's sales increased after the NMT systems had been implemented, since various PTTs started to order mobile telephony infrastructure equipment. SRA and Ericsson offered its products independently of each other, but SRA had the marketing responsibility. SRA had to fight dual battles for a more complete system concept. Both internally, versus the BX division and corporate management, and versus the market. This was apparent in the Netherlands, where both the PTT and Ericsson,

¹⁹⁷ "All sets carried the stylish Saudi Tel logotype, some were gold-plated, and there was even a variant which might be fitted on the hump of a camel." Meurling and Jeans (1997, p.23).

corporate management and the BX division had to be convinced of the advantage of the integrated system idea. The PTT wanted Ericsson switches and Motorola base stations.

This solution was supported by some at Ericsson, at least parts of the BX division. For the PTT and Motorola it was a firm deal, including Ericsson switches and the competitor Motorola's base stations. SRA had some base station technology of its own, but lacked an important and essential small-cell technology. Some argued that it would take at least two years to develop the technology internally. Nevertheless, Lundqvist continued to fight. He happened to know, and managed to recruit, one of the best US consultants in the area, Chan Rypinski (Meurling and Jeans, 1994). This move helped in convincing the parties. SRA and Lundqvist were playing a tough game with high stakes. Their position contra the PTT was "take it all or leave it all".

Lundqvist tried his best to convince the parties involved. First, he obtained partial consent from the CEO, Björn Svedberg. "Svedberg was neutral, he did not knock me down." [Åke Lundqvist]. Second, some BX division managers were convinced. Hans Flinck, a manager in the BX division, actively supported the idea. The PTT's purchasing department, however, showed no interest in the proposal. Unconventional methods were required. When the PTT did not listen, Lundqvist became furious: "This was the only time I ever slammed my fist on the table while arguing with a customer" (Meurling and Jeans, 1994, p.69, McKelvey et al., 1997, p.34).¹⁹⁸ The skeptical PTT was finally convinced of Ericsson's superiority. Some managers at BX were clearly upset with SRA's tactics in the Netherlands negotiation. SRA put the whole deal at risk when they hardly had any mobile telephony products and knowledge to contribute. Since BX also supplied switches to the PTT's fixed network, relations with this customer had to be handled with care. However, SRA continued its aggressive and ambitious ways of doing business.

¹⁹⁸ Meurling and Jeans (1997, p.24) referring to Flemming Örneholm, SRA marketing manager.

¹⁹⁹ Åke Lundqvist cited in McKelvey et al. (1997, p. 34).

9.3.3 *Grow*: International Expansion – the rest of Europe and the US

The deal with the PTT in the Netherlands marked a start of more integrated mobile telephony system sales. SRA was finally after much pressure and debate given the whole business and system responsibility by Corporate Management and CEO, Björn Svedberg. The drive from SRA to coordinate proposals into a package deal had paid off. SRA and mobile telephony was now at least and at last "an accepted, but not acceptable activity" [Bertil Bogren, Controller SRA at the time]. Nevertheless, BX was still responsible for the development of the switches and sold them to ERA.²⁰⁰ While mobile telephony now was central to SRA, it was still a peripheral and negligible business for the rest of Ericsson. Friction continued while the small radio company kept to its vision. In 1983 Åke Lundqvist predicted that "by the turn of the century, sales in Ericsson's mobile telephone business would pass those in public telecom". John Meurling, Ericsson's Director of Investor Relations, replied "God help us, that's ridiculous!" (Meurling and Jeans, 1994b, p. 48).

In order to acquire knowledge in mobile telephony, SRA had an active policy. "We had a well-developed buying approach, we bought firms or consultancy services" [Åke Lundqvist]. Two consultants were very important in the US venture: the consultant in the Netherlands case, Chandos Rypinski, and Jan Jubon, who first had inspired Åke Lundqvist and SRA to enter the US. The entry was initially a trial and error expedition: "Åke Lundqvist thought the risks were reasonable. They should...make a try. They considered a marketing exercise with limited resources" (Meurling and Jeans, 1994a, p.74). The organization set up was small, in temporary offices and with staff commuting to the US. Its job was to get acquainted with the operators and present products and services: "There were two or three persons in the US, making calls for hours...they made a superhuman accomplishment. EIS (Ericsson Information Systems)²⁰¹ did the opposite, they had hundreds of salesmen" [Åke Lundqvist]. This characterized the entrepreneurial way of SRA. Furthermore, SRA experimented with various methods in order to gain contracts and they took considerable risks. In the competitive fight, when they had entered the US, Lundqvist

²⁰⁰ In the Nordic market, where the PTTs did the system integration themselves, the former arrangement, with separate bids, was kept.

²⁰¹ Ericsson Information System - the bold new diversification strategy initiated by Corporate Management.

brought up the idea of taking responsibility for filling the stock of subscribers, if the operators had not filled it themselves within a certain time frame. It was initially quite successful, but some argued that in the end a large sum of money was almost lost (Meurling and Jeans, 1994).

An opportunity in the UK appeared at the same time as the US venture. Massive resources were required in the US. An additional attempt in another market where Ericsson had limited and mostly unpleasant experience would put even more pressure on the organization: "We had to choose between the US and UK markets, we decided to take them both on" [Jöran Hoff, leader of product development (US mobile system) at the time]. It was a bold venture to expand from a small sales organization to a large manufacturing and R&D company within the UK. In addition it meant working with a new mobile telephony standard, TACS. Besides entering into risky market ventures, daring actions were undertaken internally as well. When SRA entered the US it did not have the products. It developed a base station based on its prior knowledge in radio technology for the military. "Normally it takes 3-4 years to develop a base station. We took one that we used for military purposes, but we managed it, it had a good technical performance" [Åke Lundqvist]. And since the AXE switch, the new digital switch provided by Ericsson, seemed too large especially for small networks in the US, where competitors had smaller and cheaper ones, they carefully thought about building their own switch. AXE was considered too costly anyway and the trouble with BX could be put aside if they had their own switch. It would have given them independence from the Public Telecommunications division and AXE. SRA had product plans, even brochures, and developed prototype versions of switches (McKelvey et al., 1997, p.27).²⁰² However, this was changed when Åke Persson from BX was recruited to handle these questions at SRA. He believed that they did not comprehend the complications involved in public telecommunications and switching: "I put an end to it. They would never have made it, never." [Åke Persson, software engineer at SRA at the time].

Another undertaking was to go for mobile telephones. It was an area where SRA had started out, but where they did not have any large market shares and did not

²⁰² However, it is denied today that they ever considered building their own switch, according to John Meurling, former Director of Corporate Relations and Investor Relations at Ericsson.

have any products at all to offer the US market. Motorola marketed mobile phones in the markets which were up for mobile system bids and it had swung the decisions its way (Meurling and Jeans, 1994b). SRA set up the "Ericsson Mobile Telephone Laboratory" 1983 in the southern part of Sweden, in the old University town Lund, well distanced from any interference from Ericsson headquarters in Stockholm (Meurling and Jeans, 1997), but in particular from mobile systems in Stockholm since they seemed to require special telephones for every new system. However, the mobile telephone business was quite small and unprofitable through the whole decade.

As SRA entered more and more markets in Europe and North America, the company faced an increasingly complicated environment, including various technological and standard uncertainties, and deregulated markets involving more and more multifaceted customers. The market potential was highly unpredictable and competition intensified. SRA encountered this complexity of business activity with "independent entrepreneurs". SRA was dominated by a business and action-oriented culture: "...hunting mobile telephone technology...fighting over markets...and firing at everything we saw" [Jöran Hoff]. This entrepreneurial and independent culture of SRA caused friction with the more methodical and bureaucratically oriented corporate management and BX, the Public Telecommunications business area: "It was two completely different worlds. Ericsson was ignorant, there was animosity and competition" [Håkan Ledin]. There was friction for a long time with Ericsson: "It was difficult, it was a totally different culture" [Jöran Hoff].

The initial trial and error way of business and debacles with products and markets implied a lack of strategic forethought and planning. There was no strategic plan of substance for SRA's establishment in mobile telephony and entry into new markets: "To start with I do not believe there was any strategic plan at Ericsson...these two important strategic events [entering the US and UK] were never part of any plan..." and "Another thing which was not part of our strategy was the entry into Japan" [Åke Persson]. Strategic planning and thinking did, however, play a certain role on some accounts. The vision to conquer the world in wireless telephony was established within SRA and put on paper in the early 1980's when a strategy consultant and advisor whom Åke Lundqvist had met at IMD, Peter Lorange, assisted the management team in strategy. No detailed strategic plan existed, there was no

strategic planning process to begin with, and business was very much conducted from case to case, but strategic thinking was still part of the process: "We thought of strategy every day every minute...at other companies they think of strategy in the beginning of the year and then they go by the budget" [Åke Lundqvist]. At the outset there was no "explicit grand strategy" of entering mobile telephony, but gradually strategic thinking and plans were used. The strategy was a "a mixture of strategy and tactics, a common thread" [Åke Lundqvist].

9.3.4 *Harvest and Termination: Global Expansion and Entry into Mobile Telephones*

SRA continued its expansion into new markets via its entrepreneurial way of doing business. With the mobile telephony vision as a foundation, SRA aimed at gradually moving into different technologies, standards and markets with the "...strategy [to] obtain as many customers as possible and then deliver" [Jöran Hoff]. They entered the Far East: "Often the Asian ministries answered that they did not have 450 MHz available...our people became acquainted with these engineers and located opportunities in its frequency plans...we were very proactive" [Åke Persson].

A certain balance of power had been established between Radio Communication and Public Telecommunication (BX), through the division of responsibilities. The former was in charge of radio technology and selling the system and the latter responsible for the switch. However, controversies in general and in regard to the mobile telephony switch in particular continued. The question was who should be in charge of it and who had the competencies to be in charge: "There were lots of discussions about it...but they [BX] were determined and insisted on keeping it." [Åke Persson]. However, in 1988 the mobile telephony business was almost fully integrated. ERA was given responsibility for the entire mobile telephone system, including switches. Nevertheless, R&D for GSM, the new pan-European digital mobile telephony system, was still controlled by the Public Telecommunications division.

The same year the Swedish base station company Radiosystem, a spin-off from Magnetic, was acquired. It doubled Ericsson's world market share in base

stations to 40% (Mölleryd, 1996). Åke Lundqvist, who was considered "too wild and unstructured" by corporate management and whose ERA still ran into conflicts with the rest of the organization, resigned. His departure was partly due to the friction with BX. Lars Ramqvist became the President of ERA. He came from the four-man Corporate Executive Management team and the change indicated the increased importance of ERA in Ericsson. In addition, more structure and order in the organization followed.

Sales successes and expansion continued as ERA entered digital standards during the early 1990's; the existing standards were European GSM, American D-AMPS and Japanese PDC. After the first market entries, into the US and UK, a strategy evolved which implied an entry into all standards. In 1992 mobile systems became totally and fully integrated as the Radio Communication unit, ERA, was finally given the responsibility for the switches. At the same time more people were recruited from Public Telecommunications to Radio Communication. The latter business area subsequently became larger than Public Telecommunication: "But there are still individuals at ETX [Public Telecommunication] who are saddened, and maybe that's not so strange if for decades you've been biggest and best and the most beautiful." (Meurling and Jeans, 1995). At the outset of 1997 Radio Communications was divided into two new business areas, Mobile Systems and Mobile Phones and Terminals. Now the two largest business areas were involved in mobile telephony. Meanwhile the Public Telecommunication business area, renamed Infocom, went through a restructuring process and some sections were outsourced and sold. In 1998 mobile telephony systems and mobile telephones predominated in Ericsson with sales exceeding 70% of total.

9.4 The Creative Motor in Pharmacia & Upjohn

9.4.1 The Smoking Cessation Unit – A Survivor in a Hostile Environment

From the very start smoking cessation encountered a hostile environment, both in terms of internal company context and external industry context. Providing an

addictive poison in an environment focused on delivering remedies and medication turned out to be challenging. Nevertheless, Ove Fernö, the inventor of the nicotine chewing gum, did not give up, but struggled further despite the fact that the research department and head of research did not approve or support the venture. Even after the smoking-cessation product, Nicorette, had been launched on the market, the struggle continued, since the environment was still hostile and major changes were going on in the pharmaceutical industry. The focus in the company was on prescription pharmaceuticals, not on consumer health care, OTC (Over The Counter – non-prescription) products, and smoking cessation.²⁰³ Smoking cessation was considered out of place in the companies of which it was part and in the pharmaceutical industry in general: "We were considered a strange creature several times during this process" [Stefan Appelgren, Controller Nicorette later Consumer Healthcare].

Somehow the unit managed to survive all forms of restructuring, reorganizing, divestitures and strategy changes following the mergers and acquisitions of the companies of which it was part. The role of smoking-cessation and OTC products was not self-evident in these change processes. Jörgen Johnsson, with a history in consumer products, headed the smoking-cessation unit from the early 1990's together with Stefan Appelgren, Financial Manager, Sölve Nilsson, Human Resource Manager and Lennart Sorelius, Marketing Manager. The unit was kept intact and was retained by Leo, Pharmacia, Kabi Pharmacia, Procordia, Pharmacia (II) and Pharmacia & Upjohn, throughout the pharmaceutical consolidation process in Sweden, Europe and the US. Against all odds, the smoking-cessation product, Nicorette, survived the first years and also managed to survive the following years of consolidation, mergers and acquisition.

9.4.2 Start up: The World's First Smoking Cessation Product – Entering the Swedish, European and the US markets

Ove Fernö at the Swedish Leo pharmaceutical company, later acquired by Pharmacia, saw a tremendous potential in the smoking-cessation product and early on compared

²⁰³ Prescription products are also referred to as *ethical* products in the industry, in contrast to OTC products.

the potential with the size of the tobacco industry. There was, however, not much support for a smoking-cessation product at Leo or in the pharmaceutical industry in general. Nicotine was essentially considered as an addictive poison, and chewing gum was not considered particularly sophisticated by the pharmaceutical industry or by government authorities and regulating agencies. This led to an approach towards the tobacco industry in order to attract interest and support and perhaps sell the product, but they were sceptical as well. Lennart Sorelius, Export Director at Leo, was, however, positive. He saw a large export potential in the product. Sorelius supported Fernö in the anti-smoking ("AS") project. It became known as the "AS project" internally and often referred to "that damn AS project".²⁰⁴

The work continued more or less under cover. Some activities had to be concealed: "They worked behind a 'screen' [secretly]" [Stefan Appelgren, Controller Nicorette later Consumer Healthcare]. There was no particular project, no allocation of funds for investment, and no budget. Nevertheless, Ove Fernö managed to go on with the development of the product. He and another researcher were the ones working on the product. There were major problems of stability and bio-availability (keeping a steady and durable flow of nicotine). Over time the anti-smoking researchers received somewhat more support, but they still had major difficulties in attracting resources. It was a difficult fight with other, core, high-status pharmaceutical areas, such as cancer research. It took ten years until the product, branded "Nicorette", reached the Swiss market in 1978, but it would be a long struggle before it would be an accepted product since smoking was not considered a disease. "Nicorette" was a combination of the prefix nico- in nicotine and the suffix -rette from cigarette (Urde, 1997). Lennart Sorelius, Export Director Leo, was one of the pioneers who promoted Nicorette and fought for its funding and survival: "The research department and head of research was against it. Nobody believed in it". Even after the introduction, the friction with other areas in the company continued: "It was discussed several times whether to discontinue the Nicorette project" [Stefan Appelgren].

Nicorette was a prescription product at the outset, but there were thoughts even in the early 1980s of transferring it to the OTC market. It was launched as a semi-

²⁰⁴ "As" (=carrion) in Swedish is a somewhat deprecatory expression.

OTC²⁰⁵ product in Switzerland as early as 1978. Additional European markets were entered and sales finally took off when Nicorette was launched in the US in 1984. Product development continued, resulting in a variety of chewing gum strengths and flavours. Sales boomed in the mid 1980's after the launch in the US and Australia. Internally, Nicorette began to be viewed more favorably as sales increased, but it was still considered an odd product within the company and in the pharmaceutical industry. Nicorette was, however, very well received on the market and by the public. Fortune magazine chose Nicorette as "The Product of the Year 1984" in the US.

Nicorette was Leo's largest-selling product when Pharmacia bought Leo in 1986. However, the product was despised by many researchers and others in the new parent company: "It was considered as crap by Pharmacia!" [Lennart Sorelius Export Director Leo, President Nicorette later Marketing Manager]. Nevertheless, it was easier to make the case for the product as sales continued to increase.

Nicorette was introduced in France and Italy in 1986, and international sales reached above 90% of total sales. Jörgen Johnsson was in charge of Leo's internationalization and international sales and strongly supported Nicorette, which was the main product behind Leo's international expansion. The potential was immense, since many markets outside Europe and the USA remained to be entered and the US and European markets were not fully penetrated. Moreover, Nicorette was still the sole smoking-cessation product on the entire world market in 1987. In the following years a range of new markets outside Europe and the USA were entered.

Organizational changes continued in the wake of the acquisition of Leo by Pharmacia. The Nicorette organization was subsequently formed into a separate company with Lennart Sorelius as President, but the company was never made operational, it was part of Leo Medical Products with Jörgen Johnsson as Managing Director. There were thoughts of inviting other parties to become shareholders, but this idea never materialized. Leo had increasingly become an international pharmaceutical company, and Pharmacia strengthened its international profile after the acquisition.

²⁰⁵ It was permissible to sell the product without a prescription in Switzerland, but marketing was not allowed.

Jörgen Johnsson had continuously been promoting Nicorette and it had become Leo's largest international product. He saw strong similarities between consumer markets, with which he had considerable prior experience, and the smoking-cessation market and OTC markets in general. It was a question of combining consumer market principles with pharmaceuticals: "I was somewhat a combination myself since I had experience in working with consumer products on international markets" [Jörgen Johnsson, President Nicorette later Consumer Healthcare].

The OTC market was a focal area of the team managing Nicorette. It was felt that self-medication would become a more important market. The Nicorette patent would expire in the mid 1990's, and it was important to continue the build-up of a very strong market position prior to that time and then to obtain reclassification of Nicorette as an OTC product in more markets. Nicorette was still an ethical (prescription) product in most markets, but applications had been filed at drug administrations in several countries in order to enter the OTC market. Research continued in order to prolong and renew the Nicorette patents; in particular, the company started to look into new dosage forms for nicotine, besides chewing gum. Pharmacia Leo also had a range of other OTC and self-care products such as analgesics (pain-relieving drugs) which needed to be made more competitive. However, many at Pharmacia-Leo thought that selling Nicorette OTC would be harmful for the product and for the company more generally.

Market investments had to be increased for purposes of distribution, advertising, promotion, etc. as competitors entered the market. This resulted in some clashes with other therapeutical areas. It was a very difficult, even overwhelming, task to explain the importance of marketing, promotion and branding to the rest of the group: "We had to work extremely hard to fight for our ideas and defend our investments. There was a long period of explaining the importance of OTC until others could understand it." [Sölve Nilsson, Director Human Resources Nicorette later Consumer Healthcare].

The team behind Nicorette and the Self-Care unit tried to argue for the increasing importance of OTC products in the market. They emphasized the general growth in the market from the increased interest in self-care and the efforts by governments to reduce its cost for pharmaceuticals by transferring drugs more quickly

to the OTC category. This had important implications in terms of marketing and sales; increasingly, marketing had to be directed towards pharmacies and end consumers, in contrast to informing physicians.

Nevertheless, other therapeutics were ranked considerably higher and supposed to have priority: "The sell-out of OTC and Nicorette was discussed" [Sölve Nilsson]. A valuation of Nicorette was made and it seemed it might be up for sale again: "I was asked to make some analyses and calculations in preparing a divestment of Nicorette"²⁰⁶ [Lennart Sorelius]. Some individuals in corporate management argued that "...an OTC launch of Nicorette would be too costly and that it was an area where we do not have enough competencies" (Lars Ingelmark, Chairman of the Board of Pharmacia Nicorette, Urde, 1997, p. 273)²⁰⁷. Lars Ingelmark and Jörgen Johnsson, on the other hand, argued that Nicorette had a future because of its profitability and market potential: "In principal a drug can be used as certain diagnostics are used; they are easy to handle and do not have any side effects. Today ulcer pharmaceuticals are non-prescription in Denmark...the economy is driving developments towards more self-care" (Lars Ingelmark, Chairman of the Board of Pharmacia Nicorette, Urde, 1997, p. 273).²⁰⁸

The efforts at expanding the Nicorette market continued and accelerated. The main focus was on building marketing capabilities that were essential for OTC products and Nicorette. Many new employees with backgrounds in consumer sales and marketing were recruited from companies such as General Foods, Unilever, etc. In this way the company was deliberately seeking to combine consumer-marketing know-how with its knowledge of pharmaceuticals: "It was of vital importance to be ahead in terms of knowledge, I would like to underline and stress that word, to be ahead when it comes to knowledge, in consumer marketing, global branding, manufacturing, supply chains, etc" [Jörgen Johnsson]

²⁰⁶ One motive for the valuation was that Financial Times had criticized Pharmacia for paying a too high premium for Leo. The valuation of Nicorette was intended to prove them wrong.

²⁰⁷ The correct title would probably be Chairman of the Board of Kabi Pharmacia Consumer Pharma.

²⁰⁸ The English translation has been somewhat adapted from the Swedish version in collaboration with Lennart Sorelius. The quote in Swedish: "Om läkemedlet är lätt att hantera och inte har några biverkningar kan det i princip användas som diagnostika. Idag är exempelvis magsårsmedicin receptfri i Danmark... Samhällsekonomi driver utvecklingen mot ökad egenvård". Again, the correct title would probably be Chairman of the Board of Kabi Pharmacia Consumer Pharma

Other capabilities that were important to develop were "switching capabilities;" these are the capabilities required to switch products from prescription drugs to the OTC market. This was a demanding process in which detailed registration dossiers had to be filed with the regulating authorities. Nicorette was successively transferred over to more and more OTC markets. It was felt that the transfer of drugs to the OTC market as patents expired would become significant. The company worked proactively and jointly with the authorities in order to establish criteria for the Nicorette product. In fact, the company worked closely with the FDA in working out guidelines concerning smoking-cessation agents: "It was extremely important to be ahead both in terms of ideas and knowledge...we had to be ahead and do a lot of work in clinical tests and a range of other activities to prove that Nicorette could be used safely and without a prescription, and we had to inform authorities on how they ought to evaluate smoking cessation" [Jörgen Johnsson].

After the merger between Pharmacia and Kabi in 1989, the debate and struggle regarding Nicorette remained. Nicorette was still considered as an oddity in a pharmaceutical company. It was highly uncertain whether Nicorette was to be kept within the new constellation or divested. The new management stated that the focus was on cancer, urology/gynecology and auto-immunity: "The remaining parts were kept in order to evaluate whether they fit into the new structure or should be divested" (Wijkström, 1991/B2, p.8).

Despite the turbulence, the enterprise of the Nicorette unit to expand further internationally, to transfer Nicorette into OTC and to develop new dosage forms proceeded with unbroken determination. Nicorette was released for non-prescription sales in Sweden and the UK in 1990. The development of a nicotine patch was also well under way. The new dosage forms were expected to increase sales considerably. Nicorette continued to be successful, and the largest markets in 1990 were the US, the UK and Scandinavia (Procordia, 1990). International expansion into more markets outside Europe and the US continued.

9.4.3 Grow: Expanding into more markets and more OTC products

The fact that Nicorette was not divested in the Kabi merger and that Nicorette had managed to gain some support did not mean that the product and company had an established position within the Procordia conglomerate. The internal opposition continued: "The resistance was incredible. We were looked upon as *pariah* in the beginning, something which they tried to isolate, and if that did not work they tried to incorporate it and degrade it. Or else it was slandered" [Jörgen Johnsson].

Meanwhile the company started to register for approval in Japan and other non-European and American markets. In addition, a new Nicorette product was launched - a nicotine-coated patch. Nicorette continued to grow and was successfully reclassified from an ethical (prescription) to an OTC product in Sweden and the UK. There was enormous growth in sales in the beginning of the 1990s as a result of intensified market activities, the launch of a skin patch for smoking cessation, and, to some extent, the recovery of the distribution rights.

Nicorette finally started to gain some support from corporate management after years of struggling in the organizational and strategy dialogue that had started after the merger with Kabi. However, resistance from parts of the Pharmaceutical Divisional management and other business units within the Pharmaceutical Division remained. The Nicorette product appealed to Jan Ekberg, President of Kabi Pharmacia. In particular, it was felt by the Nicorette team that he understood the business logic behind consumer products. One reason was that he had started his career in consumer products. Mats Ringesten, Director of Strategy and Business development at Procordia, also supported Nicorette and pointed to studies that verified the trend towards increased individual health consciousness and increased efforts by governments to reduce its cost for pharmaceuticals through transferring drugs to the OTC market.

With this new support, Nicorette was put in a separate business unit with Jörgen Johnsson as Managing Director and was allowed to survive within the group. Furthermore, more money was invested in buying back license and distribution rights in Europe - a significant investment. Other business units in the Pharmaceutical Division were dissatisfied since it was difficult for them to understand the business logic: "They were not that positive at all, although it was not difficult to understand

the different business logic. They simply did not believe it was a correct priority; it was not something that we should be dealing with. It was more important for them to put resources and management capacity into other businesses" [Jan Ekberg, President Kabi Pharmacia later Pharmacia & Upjohn].

The support from was far from total: "About two thirds of corporate management did not believe in it, and you do not get complete support until you have the final result" [Jörgen Johnsson]. The work on new dosage forms for nicotine, besides chewing gum and the new patch product, was intensified. A number of new administration forms for Nicorette were scheduled. At the same time, efforts proceeded to realize the OTC vision, which focused on the tendency toward reclassification from ethical (prescription) to OTC (non-prescription) by regulatory authorities, increased self-health awareness and a growing emphasis on branding in the pharmaceutical and OTC markets as part of life-cycle management.

The Nicorette and Self Care unit, both based on OTC products, had similar visions for the future of the OTC market and the same interests. They fought the same battles internally and the problems for both increased when President Jan Ekberg left Pharmacia to become CEO and President of the parent company, Procordia. Håkan Åström, prior head of the Nutrition unit at Kabi, became the new President of Kabi Pharmacia. There was no major change regarding the OTC products, but it was felt that the support for it among corporate management decreased: "I would say that this was scaled down again when I left senior management at Kabi Pharmacia" [Jan Ekberg].

The challenge of convincing others within the company was largely one of simply getting them to understand a business logic that was completely different and had much more in common with consumer products in general than pharmaceuticals. In the pharmaceutical industry the focus was very much on product margins - the higher the margins, the more exclusive and better the product. In this regard the OTC products were behind, but some products were still far more profitable: "People were fixed on a perspective based on margins. I simply emphasized that we ought to study the capital turnover rate and make a profitability analysis. They were stunned when I showed them the curves and figures" [Lars Backsell].

The market battles intensified in parallel with the internal ones. Earlier Nicorette had been more or less alone on the market, but more competitors had entered the smoking-cessation market, and fights with competitors increased, although Nicorette was still the market leader and sales soared. Marketing and advertising capabilities became even more important as the products acquired OTC status in more markets. Marketing efforts could increasingly be directed directly at consumers. The Nicorette chewing gum and the skin patch were being released for non-prescription sale at pharmacies in more and more markets. In addition, a new Nicorette product - a nasal spray - had been registered in several countries.

Sales exceeded 800 MSEK (roughly US \$100 M) in 1993, and there were no signs of a decline. Given the sales figures, it was easier to defend Nicorette internally. The Self Care and Nicorette business units continued the discussion concerning a more ambitious emphasis on OTC at Pharmacia. Jörgen Johnsson and Lars Backsell presented their ideas for a more focused emphasis on OTC products to Pharmacia's corporate management and the Procordia CEO and President Jan Ekberg. It was felt that there was no particular strategy for the OTC products: "I never saw any substantial strategic reasoning concerning OTC" [Lars Backsell].

After the acquisition of the Italian pharmaceutical company Farmitalia Carlo Erba (FICE), including the OTC unit Carlo Erba, Jan Ekberg had once again become President of Pharmacia. The Nicorette and OTC units finally received support for a unified consumer health care unit. Consumer Pharma, including Nicorette, Nordic Self Care and Carlo Erba was formed with Jörgen Johnsson as President.

It seemed, however, that OTC still was not fully a part of any explicit corporate strategy at this time: "The formation of this [the Consumer Pharma Division] was not particularly sophisticated. More things happened and it became this way" [Jan Ekberg]. It was still difficult to defend and explain the different OTC business logic and, in particular, to make clear that the OTC market as such was of increasing importance for the pharmaceutical industry in general.

Not only internally, among corporate management and within Pharmacia, were there divergent views concerning the future importance of the OTC market. The industry itself appeared skeptical about OTC's becoming more significant and a core part of pharmaceutical industry strategies, even if there seemed to be an acceptance of

Nicorette: "It was a very hard sell because this was not at all generally accepted, although *today* it is accepted in the whole industry. The significance of the OTC market, switches to OTC, preventive care and self-medication was not obvious or important in the industry at that time" [Jörgen Johnsson].

The believers in OTC expected that market developments would prove them right. They estimated the OTC market to grow by approximately 10% a year, and the OTC share of the total pharmaceutical market was increasing in several markets. It was strongly felt that consumer trends in terms of self-medication and health consciousness, as well as pressure on national health care budgets, would lead to increased reclassification from prescription to OTC products. These environmental and competitive developments in terms of an increased consumer focus would benefit the OTC market. In fact, the Nicorette market shares were growing even faster than the market and had exceeded 40% of the world market. It was clear that the multiproduct approach, with several dosage forms, was paying off, and research and development on even more forms of administering Nicorette continued. Marketing efforts were increasingly focused on end consumers.

Other products of Consumer Pharma, besides Nicorette, which was the largest seller, were three branded analgesics, or pain relievers (Treo, Magnecyl and Ipren) which had more than 50% of the Swedish market, the laxative Microlax and a range of local OTC product on the Italian and Spanish markets. The aim was also to enlarge the product range to include more products from Pharmacia that had previously been subject to prescription but would now be transferred to an OTC status.

9.4.4 *Harvest/Termination*: Global Brands – Global Successes.

After the Pharmacia and Upjohn merger in 1995, the OTC portfolio of the company increased even further. Once again, however, the OTC sections, or Consumer Pharma, struggled to explain their business and the business logic of OTC markets. They seemed, however, not to be on the list for divestment. The challenge for Consumer Pharma in the merger process was to clarify the close resemblance to consumer markets, where market investments were as important as research investments, and to

elucidate the growing importance of OTC for other pharmaceutical products, which were to be switched to an OTC status as patents expired.

However, in Consumer Healthcare it was felt that the Branding and an emphasis on brand equity was a significant and integrated part of the OTC and Nicorette strategy: "The task for Consumer Healthcare, within the framework of Pharmacia & Upjohn, is to lead and develop brands. Our role is to transfer products from ethical [prescription pharmaceuticals] to OTC [non-prescription pharmaceuticals]. It concerns brands, to build brand equity and manage brands. In other words, brands are of utmost importance. This is also a corporate issue given the focus Pharmacia & Upjohn has on consumer-oriented products" [Jörgen Johnsson, President, Pharmacia & Upjohn Consumer Healthcare, 960828, Urde, 1997, p.296]. However, in Consumer Healthcare it was felt that the other sections other sections and divisions of the company did not see, or did not want to grasp, the business logic of OTC products. The OTC products needed their own sales and marketing force and wanted to make more market investments, particularly in the French and German sales forces. Moreover, there was a different logic of production and supply, besides the different business logic in the marketing and distribution. The production series were longer, deliveries were made approximately once a week and there was a continuous development of different products in terms of taste and dosage forms.

Subsequent to the merger, the OTC sections of Pharmacia & Upjohn were formed into a separate business unit, Consumer Healthcare, headed by Jörgen Johnsson. The most important product of Upjohn was the hair-regrowth treatment for hereditary hair loss, Rogaine. Both Nicorette and Rogaine received considerable impetus from the merger, since distribution and marketing capacities in the US and Europe were thereby increased. The great success of Nicorette continued. Together with Nicotrol, a second brand on the US market, it had gained a 50% world market share by 1995. Sales increased by considerably in 1996 and exceeded \$200M. It had become the fifth top selling product in Pharmacia & Upjohn, and Consumer Healthcare was the second largest business area. Consumer Healthcare was definitely winning the battle on the market, and with that came more internal support. Consumer Healthcare and Jörgen Johnsson received some credit for their emphasis on life-cycle management and the success of the focus on switching products to OTC: "I would say

that Jörgen Johnsson has been a significant force in emphasizing that it was possible to prolong the life cycle of various drugs via the OTC market" [Jan Ekberg]

The philosophy of switching products to the OTC markets was maintained. Rogaine (Regaine outside the US) was launched as an OTC product in the US and in selected European markets in 1996. It was the first hair-loss treatment drug to be reclassified as a non-prescription product. The introduction of entirely new products continued as well. A Nicorette inhaler was launched as a fourth delivery system for nicotine. It was put on the market first in Sweden and Denmark and subsequently in several other European countries in 1997. Other forms of administering were in the pipeline. Rogaine Extra Strength was launched in the US. Apart from Rogaine and Nicorette, Consumer Healthcare now had a broad product portfolio in therapies for ailments such as allergies, nausea, diarrhea, constipation, pain, cough and colds, as well as antifungal, anti-itch and anti motion-sickness products (Pharmacia & Upjohn, 1997).

The emphasis on switching from prescription to OTC, or "life-cycle management," became a more central part of Pharmacia & Upjohn's strategy: "Consumer Healthcare works closely in long-term strategic planning with Pharmacia & Upjohn's ethical prescription business in identifying current and future products with OTC potential. Through consistent branding and strategically and carefully prepared switching of eligible products from prescription pharmaceuticals to self-medications, its product life cycle may be prolonged well beyond patent expiration" (Pharmacia & Upjohn Company Presentation, 1996).

Jörgen Johnsson, President of Consumer Healthcare, was appointed Senior Vice President and a member of the corporate management group early in 1997. It was clear that the internal support for OTC products had gained momentum. Consumer Healthcare was at last a central part of the company, while other non-prescription sections became more peripheral. It was also recognized among prior skeptics that Consumer Healthcare and the OTC products had a more strategic role to play than had historically been anticipated. Some acknowledged that the common background among management in prescription pharmaceuticals might have locked the company into a prescription perspective and that more could have been done.

Fred Hassan, the new CEO, stressed the importance of Consumer Healthcare, its role in life-cycle management and its global products, Nicorette and Regaine: "An important extension of the prescription pharmaceutical business is our consumer pharmaceuticals, or over-the-counter, business. This business enables us to extend the life cycle of our key pharmaceutical products while meeting the needs of consumers" (Pharmacia & Upjohn, 1997).

In 1998 Consumer Healthcare finally felt that it was receiving more or less full support for its OTC view: "Only for a couple of months now has there been full and complete support for this, under the management of Fred Hassan. It will be emphasized in a document in the corporation's strategic plan" [Jörgen Johnsson]. Consumer Healthcare was at last a core business: "When we sketch a picture of our activities today, they consist of pharmaceuticals only and within that an OTC section and an ethical section. OTC is a core part of Pharmacia & Upjohn today" [Håkan Åström].

The principal strategy was outlined in the Special Fall 1998 Edition of the Pharmacia & Upjohn corporate magazine "Focus – The Strategic Direction Issue" under the headline "Concentrate on prescription and over-the-counter pharmaceuticals as our core business": "Pharmaceuticals, prescription and over-the-counter, are our core business and form the principal platform for our future growth" (Focus, 1998, p.8). The emphasis on OTC products was especially emphasized: "A strong OTC position is crucial to our effort to effectively manage the life cycle of prescription products and tap this multi-billion dollar market" (Focus, 1998, p.8).

Nicorette was among the ten largest OTC brands in the world and had a world market share of around 50% in 1998. The market potential was still immense for Nicorette, since there are 1 billion smokers around the world and only 2-3% in the target group are currently using nicotine replacement products. And more OTC products were to be added to the portfolio. The hunt for a third global brand, besides Nicorette and Rogaine, had started.

9.5 The Creative Motor in AGA

9.5.1 The Eastern Europe Team or "Skunkwork"

The fall of the Berlin wall came as a surprise for AGA: "AGA was not very well prepared" [Lars Timner]. There was no immediate reaction from AGA, but subsequently the Regional Manager for Europe, Anders Rungård, asked Lars Källsäter (previously head of the Swedish subsidiary) to look after questions relating to Eastern Europe. It was not a formal project or part of any plan, but the task was rather to check and "look into" Eastern European issues. There were no specific objectives or directions; the aim was solely to find out what the changes in Eastern Europe would mean to AGA and if there were any opportunities for the company.

Lars Källsäter worked part-time with the task to start with. He had no prior experience with Eastern Europe: "I did not know anything, I had been in Moscow once" [Lars Källsäter, Director Eastern Europe Project]. Later he involved another manager, Lars Timner, a former technology manager. This "Eastern Europe team", Lars Källsäter and Lars Timner, started to look into what actually was going on in Eastern Europe. There were no particular directions for them to follow and it started without the involvement of the President and board: "It started as a skunkwork" [Lars Källsäter].

The team traveled, explored and studied Eastern Europe, sometimes together with managers at subsidiaries in neighbouring countries. Both the investigations of the various former socialist countries and the subsequent establishments were rather ad hoc: "There was never any rigid organization" [Lars Källsäter]. The team was considered somewhat unrestrained and wild: "They were very enthusiastic and enterprising...and pushed to get one thing after another approved" [Anders Rungård, Regional Managing Director Europe]. However, it was not easy to get them to "play by the rules".

This also caused some conflicts. Corporate management, mainly consisting of the President, Marcus Storch, the Regional Manager for Europe, Anders Rungård and the Executive Chairman, Sven Ågrup, was more conservative. "When the investments approached a certain number of million dollars we had to disclose it. However, minor investments did not reach the board" [Lars Timner, Coordinator Eastern Europe

Project]. Outside corporate planning and control, the team tried to explore and exploit the evolving economies of Eastern Europe.

9.5.2 *Start Up: Looking into Eastern Europe – Entering East Germany and Czechoslovakia*

Initially the Eastern Europe team did not know much about the region they were about to investigate. It was not easy to assess the competitive situation simultaneously with the political and economical ones in all former socialist countries. Differences in technological standards, productivity, finances and marketing were large. In addition, local population and politicians did not always meet the team with open arms despite antimonopoly measures and favorable attitudes by governments. New actors kept coming in and influenced the industry in the form of politicians, various government regulators, large and still monopolized customers, etc. The weak, or more or less absent, financial system, including a lack of foreign currencies and unfavorable exchange rates, complicated matters even more. In addition, there was intensive time pressure since competitors had started to move as well: "In all cases we were pressed for time, the environment analysis and, in particular, the prediction of the future was truly uncertain" [Lars Källsäter]. They traveled to the markets in question and to local subsidiaries in nearby markets, Austria, Germany, etc. They probed subsidiary managers with some experience from the Eastern European markets and questioned relevant institutions in the markets. However, there were different schemes to obtain information: "In general it was very improvised" [Lars Källsäter]. They simply visited the local gas monopolies and related entities, like steel, chemical and medical companies, and communicated with what they saw as relevant people. The focus was particularly on operations, how to get some activities going and how to establish contacts with acquisition candidates, potential partners, local employees, customers, etc.

Other relevant information concerned the competitive situation: "How would the state-owned gas monopolies be divided up? Where in the country would they be situated? Which parts were offered to foreigners? How would the general industry structure, our customers, be reformed and privatized?" [Lars Källsäter]. Of course

more general knowledge was of interest as well. Besides knowledge about the general transformation process from communism, they wanted to know what the legal structure was like and how it would change regarding its purposes. Other relevant issues concerned the banking and finance sector.

In Hungary local initiatives, mainly from the Austrian subsidiary, had started during the late 1980's. A joint venture with a steel mill was turned down by AGA in 1988, since it could not obtain a majority share. Later, when Källsäter was involved, there was another offer to buy part of the Hungarian gas monopoly, but once again: "The board turned it down" [Lars Källsäter]. "It was a company in Hungary we really wanted to acquire, but we carelessly lost it, the board was hesitant." [Anders Rungård]. Instead a green-field subsidiary was established. Subsequently a local medical gas equipment manufacturer was acquired which gave AGA an important access to customers in Hungary.

The team assisted in the establishment of subsidiaries. Some rough frames, including business plans, market and profit targets were set up: "It was teamwork, with me and Timner, and local responsibility" [Lars Källsäter]. A "godparenting" sponsorship system was introduced, where each new subsidiary was supported by an established subsidiary in the West. Hungary was sponsored from Austria and it later supported Czechoslovakia as well. There was a similar approach in all markets, and the team continued to participate in the subsidiary activities even after the establishment. Källsäter was the chairman of the board of the various subsidiaries and board meetings could last for "two days" [Lars Källsäter]. It was the team together with local recruits that made the decisions.²⁰⁹ In general there was no clear structure or scheme: "We never had a systematic organization" [Lars Källsäter].

Together with the West German subsidiary the team wanted to enter Eastern Germany. Corporate management and the Board were more reluctant: "We wanted to enter, despite some headquarter reluctance and we started anyway", "We started to do business in Eastern Germany from a filling station in West Berlin, started an organization and established a depot in Leipzig" [Lars Timner]. However, AGA was

²⁰⁹ It is interesting to note that the expansion into Eastern Europe resembled AGA's straightforward international expansion approach in the industrial gas industry 75 years earlier in this respect: "Form a legislative unit (subsidiary)...Employ a young, ambitious and capable civil engineer. Make him the boss of the subsidiary...and develop the business" (Danielsson, 1974).

not involved at all in the acquisition bids on the industrial gas monopoly, part of which consisted of AGA's old, nationalized, facilities: "It surprised the others, they thought AGA would participate in that [the acquisitions]" [Anders Rungård]. In Czechoslovakia there was a similar development. The German competitors acquired the old monopoly company and AGA was left with a green-field establishment. However, the team and AGA managed to recruit young, well-educated and energetic staff to lead the subsidiary. Later a joint venture was formed with the Czechoslovakian Vitkovice steel group.

In the early entries there was some frustration in the team and among locals. They felt a lack of commitment from corporate management. The team and locals were close to the markets and felt the pressure from multinational and national competitors. The German competitors moved forcefully into Eastern Europe, while AGA was more hesitant: "We wanted to move faster, it was a race" [Lars Timner].

The local recruits also wanted to act more quickly, for example in Czechoslovakia: "The management [in the Czech Republic] group perceived it as a problem when headquarters did not seem to understand that establishment had to be quick" (Almquist and Ivarsson, 1996, p.25). "They [the management group in the Czech Republic] complained that there was no written strategy and they wanted more information about the rules" (Almquist and Ivarsson, 1996, p.25).

In general the team and locals wanted clearer directions and communication with corporate management: "The project group [team and locals] seldom get directives and so far it has mostly been ad hoc and it has often been unprofessional..."(Almquist and Ivarsson, 1996, p.21). "It was embarrassing that we did not have a plan or a dialogue at the outset" [Lars Timner]. In addition, the team wanted to make more substantial investments compared to corporate management: "When it comes to starting from scratch versus making acquisitions, the latter is a considerably better way" [Lars Timner]. Because of corporate management's and the Board's position, the team/skunkwork had to move cautiously and not make overly bold investments, or at least not show them too openly. However, when investments reached a certain level they had to disclose them. Anders Rungård, Regional Manager for Europe, had the formal responsibility for the region: "My role was more to make

them [investment proposals] more down-to-earth and realistic and politically acceptable [for corporate management and the Board]" [Anders Rungård].

9.5.3 *Grow*: Expanding into Poland, the Baltic States, Kaliningrad, Russia, ...

There was no particular model for gathering or examining information regarding the Eastern European markets. The team traveled around and spotted opportunities and important information all over Eastern Europe: "We found out things, traveled around and asked people!" [Lars Timner]. Since there were no specific directions for the venture, most information concerned operational activities. The acquisition of information was quite plain and simple: "We worked with the local monopolies, approached colleagues openly" [Lars Timner]. Besides gathering information themselves the team approached universities, technical schools and trade associations in the various countries. No matter what the way of gaining knowledge, it was extremely difficult in these ambiguous environments: "We simply did not know until later what we wanted to know, we did not know how to formulate the assignments at this time, how to investigate the monopoly companies for example" [Lars Källsäter].

Various approaches were used. In Poland some students were assigned to count and estimate the number of gastrucks in order to estimate production output. The team wanted to go for all available acquisition opportunities in Poland, but was only allowed to explore alternatives in northern Poland. AGA did not manage to buy anything at first. There were several competitive actors involved in the various bidding processes. Several Western multinational companies entered Poland, but local actors also played an important role. Later, after long negotiations, AGA managed to buy a smaller part of the original state company, Polgas.

The bidding process was easier in the Baltic states since there were no multinational actors competing which, in turn, made it easier to sell ideas to corporate management. They recognized the concept, since it fit the policy objective of protecting the home market. Instead, the most important challenge for the team there was to locate various gas companies, employees and customers: "We found out things, traveled around and asked things. And spoke to people associated with the gas industry" [Lars Timner]. The process had the same ad hoc and issue-based character

throughout most markets: "There was much more trial and error than systematic investigation; we picked the particular knowledge which we needed for specific purposes" [Lars Källsäter]. Corporate management had no intention of putting more resources into the exploration of Eastern Europe: "Källsäter and Timner tried to do market studies and estimate the size of markets, prices and so on, but we did not allocate any substantial resources for that purpose" [Anders Rungård].

The skunkwork team located a gas plant in Kaliningrad around the same time as they entered and identified various units in the Baltic states. The plant was well-situated for supplying the Baltic region. The investment had to be approved by the Board, which hesitated. However, later, after many discussions the team managed to get it accepted: "They [the Kaliningrad management] wanted to privatize and name it AGA. Our corporate legal advisors protested, but we thought it was a good idea. Two years ago we acquired them for nothing" [Lars Timner]. The team continued its Eastern European explorations. In general plans were short term and there was no long term strategy.

Russia was next. Penetration started in St Petersburg and then Moscow: "In Russia we identified a guy who was formerly employed by the monopoly company and we managed to receive all basic information for \$50!" [Lars Timner]. The team approached Russia's largest and leading gas company, BKZ, Balashiha, Kislorodny Zavod in Moscow. They succeeded in negotiating a very good deal and bought 85% of the company in 1994. It had 360 employees and annual sales of approximate 45M SEK (\$6M). One year later a subsidiary was established in St Petersburg.

The team wanted to continue the venture into Russia, but initially was not allowed to. As in previous cases there were some frictions between the team and local subsidiaries on the one hand and corporate management at headquarters on the other. The former group wanted to be more aggressive while the latter wanted to "establish a position at a reasonable risk"²¹⁰ and protect the home region [Anders Rungård]. The Executive Chairman of the board tried to slow down the process further since he thought management could not give the Board a complete picture of the markets: "When you enter these markets you know that there are volumes, but you also know that the prices are not there" [Sven Ågrup, Executive Chairman]. There was some

²¹⁰ A headquarters manager cited in Calming and Jakobffy (1993, p.29).

friction. "The competitors would not have been able to get ahead if they [corporate management] had been more aware. We could have made incredible deals" [Lars Timner].

9.5.4 *Harvest and Termination: 12 Eastern European Markets and Counting...*

The skunkwork team, especially Timner, fought to continue the explorations in Russia and Eastern Europe: "It was possible to buy markets cheap. I believe in it, you get results. In greater Moscow there are 50M inhabitants, let us say 30M. We have spent \$1M, invested \$10M, have a turnover of \$12M, have 1/3 of the market, if consumption increases to \$15/capita [gas] this makes \$450M, 1/3 of which is \$150M! OK, we must grow with the market, but there are no competitors! It is very profitable! This applies to all these markets! And of course we should get larger shares than the competitors!" [Lars Timner].

Corporate Management, on the other hand, did not initially approve of any further endeavours: "I drew a line at St Petersburg and that individual Moscow investment and did not want to go any further" [Anders Rungård]. The Senior regional managers had geographic and economic limits which made it difficult for the team to argue for more acquisitions and more substantial investments: "New ideas had to be handled within these given boundaries, for example acquisitions had to be handled in the ongoing business. New geographical areas become an adventure which has to be coped with as part of our regular business" [Lars Timner]. When it came to Russia, corporate management also had concerns regarding the underdeveloped market economy and especially corruption and bribery.

Despite corporate management's hesitance, Timner continued his traveling and exploration and cultivated acquaintances and relationships in Eastern Europe. Subsequently the Eastern European markets started to show some stability and growth in the mid 1990's, and so did AGA's subsidiaries. This factor contributed to a more open attitude towards Eastern European investments from corporate management, and there was a new Regional Manager for Europe. The growth in Eastern Europe implied that further investments were needed in the markets. Thus, the Board had to become

more involved in operations since the size of the investments was increasing with rising market volumes, and it approved more investments.

The team identified new investment targets in Russia and in other, new, Eastern European markets. Investments were made in Russia, Romania and Slovenia. Increasingly, acquisition became the entry mode and investments became more substantial. Friction between the skunkwork team and the corporate management and board was less outspoken. More investments were accepted and the skunkwork team felt that they were being given some recognition at last. They entered the Ukraine and achieved an agreement to acquire the largest industrial gas company there. When the entry into Eastern Europe started in 1989, AGA was present in 22 markets. In 1998, the number had increased to 38. And there were more markets waiting to be penetrated in Eastern Europe and in other emerging markets. Lars Timmer had started to explore China.

9.6 Characteristics of the Creative Motors

The creative strategy motors appeared to be described well by a *life-cycle process*. The descriptions show how initial ideas and objectives first emanated, how the strategies were identified and framed, developed and grew, and subsequently how they were accepted and successfully implemented on a corporate level. The different phases in a life-cycle process of *start-up, grow, harvest and terminate* could be identified. It involves a single entity and its mode of change is prescribed in the sense that it develops in a stable sequence, from idea to implementation. There was an inherent purpose and logic from the very start in the peripheral entities, in the Radiocommunications unit, SRA (later ERA), at Ericsson, in the Eastern European team, or "skunkwork," of AGA and in the smoking-cessation and OTC unit of Pharmacia & Upjohn. There was a built-in character of organic growth in the processes from the initial idea or discovery, as well as a determined and immanent logic in proceeding to resolve the strategic puzzle and in promoting product and/or market concepts. There was a *prescribed* mode of change (cf. van de Ven and Poole, 1995). The creative motors were framed by this logic of developing certain ideas and

by certain organizational norms and rules. Figure 9.1 provides an overview of the life-cycle character of the creative motors.

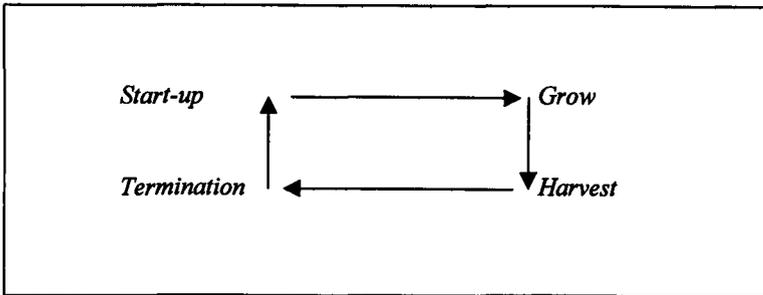


Figure 9.1: The life-cycle process character of the creative motor.

Please note that the life-cycle process is an *ideal* process type (cf. Van de Ven and Poole, 1995). Compared to the ideal, which is often used in describing innovations, the strategy-creation processes were less linear and predetermined. They involved organic growth, but with more of a discontinuous sequence and unexpected turns as compared to technology innovation models. Furthermore, the duration and integration of the different sections varied among the cases.

Strategy processes have earlier been described in terms of life-cycle processes. Mintzberg (1978) outlines strategy development as a life-cycle process: conception, elaboration, decay and death. There are, however, two important differences compared to the observations in this study. Mintzberg's (1978) focus is on one *single* strategy process, and periodic waves of change and continuity occur *within* the life cycle. The findings here indicate *two* separate strategy motors, where the creative life-cycle process does *not* include the corporate strategic change. Several other strategy models involve the life-cycle ideal-type in total (Burgelman and Sayles, 1986) or in part (Chakravarthy and Lorange, 1991). In brief, the development of strategy in the creative motors could be described in terms of an innovation process, as with technological and product innovations, but on a more general, strategic level: a strategic innovation process.

It is important to note that the creative motor and the life-cycle process do not take into consideration *constructive* modes of change. Corporate strategic change is *not* covered in the creative motor. Rather, the creative motors involve a prescribed

process of change, including an idea or vision from early on. The strategic change in itself incorporated the transformation of prior corporate strategy and was conducted on the corporate level. From totally resisting and denying the strategic puzzles at first, the company later changed its standpoint entirely and declared them to be core strategy.

Some other important traits can be discerned from the descriptions of the creative motors, besides the life-cycle properties. First, regarding the location of the creative motors, they were primarily situated outside the centre of the companies, in subsidiaries (Ericsson), projects (AGA), business units (Pharmacia & Upjohn) or technology departments (and an externally recruited president, Couplet). The creative motors were *positioned in the periphery* of the organizations, and outside corporate and senior business management and any strategic planning units.

Second, it was observed that knowledge assimilation in the creative motors was *externally directed* towards the periphery of the organization and the industry. It was also focused on the assimilation, coordination and combination of different types of knowledge into completely new knowledge.

A third important feature regarding the creative motors was that the knowledge-assimilation practices were based on *explorative inquiry and learning by doing* regarding the strategic issues.

Another, related distinguishing factor was that the creative motors were characterized by *inductive reasoning* to a high degree. Actors in the creative motors started out with certain hypotheses, tried them out, adjusted them and generated new ones. It was a process involving trial and error, informal inquiry, experiments, etc. and other forms of approximations rather than deductive methods.

A fifth distinct feature is related to the use of inductive reasoning. There was *no firm or established pattern or structure for strategy interpretation* from the start. The frames or perceptions of the managers and other actors involved were not focused on a particular industry, resource or market settings. In short, managerial frameworks or collective cognitive structures in the creative motors were not defined or focused in accordance with the traditional strategy direction. Each of these strategy characteristics are discussed in Section 9.7 in terms of learning dynamics. In particular, various knowledge-assimilation properties are emphasized. The

characteristics of managerial frameworks, or collective cognitive structures, are discussed in Chapter Ten.

9.6.1 Strategy Making in the Periphery

It seems as if strategy-creation and strategy involving complex foresight horizons are inherently dependent on new use of information and knowledge and new combinations of them. New information needs to be assimilated from outside the organization and industry in more fundamental strategy-creation and change. The strategy process is in this sense essentially a process of penetrating or *probing the environment*.²¹¹ It was at the *borders* of the companies studied that the new strategies were created, through environmental observations and through interaction with the environment. *The learning dynamics at the periphery of the organizations seemed more capable of coordinating and integrating new information.* Strategy-creation in the creative motors can be understood as a process in which identification and assimilation of external information is crucial. Various externally oriented and interwoven knowledge-assimilation mechanisms based on scanning, trial and error and experiments were instruments in the generation of the strategies.

The context and location of the creative motors seemed to play an important role in its learning dynamics and development of the strategies. The context had an influence on the way in which individuals informed themselves regarding strategies and the way they provided information for the strategies. *The knowledge-assimilation practices seemed to depend partly on the physical setting in which the actors found themselves, since they used it to understand and resolve the strategic issues.* In this sense the various knowledge-assimilation practices and actions in regard to the strategic issues appeared to be locally confined and situated (cf. Tyre and von Hippel, 1997, p.71): "Learning is often enhanced not just by bringing people together, but by moving them around to confront different sorts of clues, gather different kinds of data, use different kinds of tools, and experience different pressures relevant to a given problem." This also relates to several writings on situated learning and "communities of practice"

²¹¹ Lindblom (1990) emphasizes the importance of probing in social problem solving, and Overmeer (1996, p. 257) stresses that "...the realization of strategy should be framed as a *probe* into the corporate

(Brown and Duguid, 1991; Lave and Wenger, 1991, Snyder, 1997). The emphasis in this literature is on the social character of learning and social practice's integrated role in learning: "...learning is not merely situated in practice – as if it were some independently reifiable process that just happened to be located somewhere; learning is an integral part of generative social practice in the lived-in world" (Lave and Wenger, 1991, p. 35).

The fact that the "skunkwork" team spent considerable time together with local subsidiaries in the local context in the Eastern European markets influenced its view and learning towards the strategy.²¹² Similarly, SRA's context differed from Ericsson's corporate context. The fact that the two units were located apart from each other was important in order to "keep corporate managers away" according to several SRA interviewees, but the separate settings in terms of testing equipment, tools, colleagues, etc. also seems to have been influential when it comes to differences in learning. The location of the Mobile Telephone and Terminal business in Lund, in the southern part of Sweden, was deliberately done in order to create a separate setting and environment. It also appears as if the closeness to customers and the primary location in the technical departments of the creative motor in Couplet had an influence on knowledge-assimilation mechanisms and strategic actions. Similarly, the creative motor in Pharmacia & Upjohn acted in a separate setting with different kinds of data, clues, etc. compared to the adaptive motor and, consequently, other forms of learning. The characteristics of various learning dynamics in terms of knowledge-assimilation practices in the two strategy motors are discussed next. The role of collective cognitive structures in the learning dynamics of the motors is discussed in Chapter Ten.

9.7 Knowledge Assimilation Practices in the Creative Motors

It was clear that various knowledge-assimilation practices played an important role in clarifying and developing the strategic issues examined in the single in-depth and

environment".

²¹² This role of experiential and localized knowledge in internationalization has earlier been highlighted by Johanson and Vahlne (1977, 1990, 1992), and the role of perception differences between local personnel and HQ-representatives has been particularly stressed in relation to Eastern European investments by Swedish MNCs (Vahlne et al., 1996).

multiple retrospective studies. The manner in which different groups and actors informed themselves about the strategic puzzles seemed to influence their conception of, action towards and development of the puzzles. These group dynamics in terms of knowledge-assimilation methods varied among different groups and they generated various types of knowledge regarding the strategic puzzles. The case analyses suggest that there were various knowledge practices, with distinct characteristics, through which the creative motors developed and through which the actors informed themselves about the strategy and as well as providing information for the strategy and developing it further. Some practices were based on observations and others on more active involvement; some were based on routines and still others on more creative responses. Various practices were prevalent in different motors. For example, more creative responses such as practices geared at developing strategy-related capabilities were conducted in the creative motors. Leading actors in the creative motors specifically emphasized the importance of learning and knowledge coordination and combination (see Table 9.3).

Multiple retrospective study	
Ericsson Åke Lundqvist, President SRA/ERA	"We built a unique knowledge based on switch and radio technology...it is important to remember that old knowledge can be combined in new ways"
Pharmacia & Upjohn Jörgen Johnsson, President Consumer Healthcare	"The crucial thing is to be daring and get ahead in terms of appropriate knowledge"
AGA Lars Källsäter, Director Eastern European Project	"The general information concerning BNP development, etc., available from governments and international agencies was quite unreliable... information close to the market, our own information...how the industry developed... was most important." "We were scouting after relevant people and used all kinds of informal contacts to acquire information"
Single in-depth study	
Couplet Carl Johansson, President Scanmeck Couplet	"Information and knowledge is crucial...it provides a foundation for strategy and action." "There is a lot of information available in the industry.... but we need more information concerning competitors and new electro-hydraulic system technologies. We are trying to acquire and analyze that kind of information."
Couplet Gustav Olsson, Technical Manager	"I believe being ahead in terms of knowledge is almost more important than strategy. Strategy can determine an area to focus on or specific goals, but you need knowledge in order to implement it and know how it fits together."

Table 9.3: Some principal actors' emphasis on knowledge coordination and combination in the creative motors.

The strategies observed were generated both by means of deducing optimal alternatives based on formal strategic methods (e.g. strategic models, algorithms, tools) and by various types of approximations based on what others do, hypotheses, experiments, heuristics, etc. In the creative motors, which primarily drove the strategies, it was particularly a process of the latter - inductive reasoning. It seems as if the interaction between strategy process and content where complex foresight horizons are involved can be conceived as a series of judgmental decisions. It has earlier been noted that judgmental decision-making is especially important in complex and new situations where objectives are ambiguous (cf. Casson, 1995).²¹³ *It appears as*

²¹³ The puzzle could be interpreted as a jigsaw puzzle in this respect. The beginning and end of it is more based on deduction and possible optimization, but in those phases the strategic problem essentially

if strategy in a complex setting is not primarily about deliberately locating either resource or market position through deduction, but rather a question of managing the process of inductive conclusions where these develop. The realization of strategy is essentially forming and designing strategy content. In the analysis of the knowledge-assimilation patterns, four different types of learning and knowledge could be distinguished: *exploitation* vs. *exploration*, and *declarative* vs. *procedural* learning. These are discussed next.

9.7.1 Exploration and Exploitation

The relationship between *exploitation* and *exploration* mechanisms is central in adaptive systems. The fact that adaptive and alterable processes in organizations require a balance between exploration and exploitation is reflected in many theories of organizations and firms in the past (Holland 1975; Penrose 1959; Schumpeter 1942;) and central to many modern thoughts of organization as well (Hedlund and Ridderstråle 1992; Hedlund and Rolander 1991; March 1991, 1994; Senge 1990; Wernerfelt 1984).²¹⁴ If exploitation is emphasized at the expense of exploration, strategy will easily be caught in some sub-optimal condition of obsolete specialization to the extent that the discovery of new competencies and its advancement will stall. On the other hand, exploration alone will produce numerous underdeveloped discoveries at high cost to the extent that the gains from the ideas are not assured and no core competence is generated (March, 1991).²¹⁵ It seems as if knowledge-

becomes one of tactics. In between them the only possibility seem to be a strategy based on inductive reasoning through gathering of information, guesses, comparisons, assumptions, trial and error, etc. In doing a puzzle the arrangement of the first pieces, sides and corners, sorting pieces into heaps depending on colors and structures, etc. is rudimentary, and so is fitting the last pieces, but in between we have to rely on more approximate procedures like comparing pieces, trying them, adapting ideas about the motive, trying what worked before, copying, drawing analogies with other parts, etc. The obvious flaw of this metaphor is of course that in a business setting managers have no idea of what the jigsawpuzzle picture will look like; they will have to try to find the pieces and even make the pieces themselves.

²¹⁴For a comprehensive discussion of exploitation and exploration, see March (1991, 1994), and for descriptions of various exploitation and creation characteristics, see Hedlund and Ridderstråle (1992).

²¹⁵What further complicates the trade-off is that the two tend to drive each other out. Returns on exploitation tend to be closer in time and space and accordingly tend to overshadow exploration, which is further away in both time and space. In exploration new discoveries often fail, despite their appropriateness, because one has to learn how to handle them until they succeed. When they fail, new discoveries are undertaken instead; these also fail and so on, thus, eliminating exploitation (March 1991, 1994).

assimilation practices in organizations must maintain a balance between exploration and exploitation. The analysis of the creative motors revealed that they involved relatively more features of exploration than of exploitation. The creative motors operated outside the realm of prior strategic aims and tried out entirely new strategies. At Ericsson, SRA (later ERA) conducted exploration outside the public telecommunications area into mobile telephony; at AGA the "skunkwork" explored entirely new markets, and at Pharmacia & Upjohn a small unit explored smoking-cessation and later the OTC market. Before the distinctions between exploitation and exploration are discussed and illustrated in detail, another categorization of learning and knowledge is treated in the next section.

9.7.2 Declarative and Procedural Learning

Apart from the exploitation/exploration distinction, another important categorization of learning and knowledge can be made. It was observed in the single in-depth and multiple retrospective studies that there were differences in terms of knowledge-assimilation; one of the main ones was between active involvement (or learning by doing) and knowledge-based on observation (or learning by observing). A similar distinction between types of knowledge and learning is made in cognitive psychology between declarative and procedural learning and knowledge (Anderson, 1983; 1995). *Declarative learning* refers to explicit learning of facts, while *procedural learning* refers to developing capabilities through experience and practice.

The distinction between observation-based, or declarative, learning and action-based, or procedural, learning provides a convenient basis for categorizing the different knowledge-assimilation practices observed in the studies. In particular, it indicates that there is a time factor in strategy making, pointing to the need to take into consideration procedural learning, knowledge generated via strategy making itself or strategic action in the implementation of strategies. That type of learning provides an important part of the knowledge necessary in the strategy process.

A central tenet of strategy formation perspectives is that it is difficult to know one's resource or market positions without actively using them and trying them out. It seems as if procedural learning is a prerequisite for strategy-making, especially when

foresight horizons are complex, as in strategy-creation. The literature on strategy formulation, on the other hand, has clearly overemphasized declarative learning (except in the case of production economies).

Essentially, procedural learning takes the adaptive character of strategy making into consideration. The distinction relates to adaptive rationality (i.e. procedural learning) in organizations (March, 1978), as opposed to more calculated rationality (i.e. declarative learning) and also to behavioural (i.e. procedural learning), rather than rational choice (i.e. declarative learning), in explanations of economic change (Nelson and Winter, 1982).

The distinctive character of learning by doing, in contrast to other types of learning, has been highlighted by von Hippel and Tyre (1994) in relation to the introduction of new technologies and innovations. They observe the incapacity to identify problem-related information in complexity before the introduction of new technology. Problem solvers introduce important information of this kind *after* the new technology has been introduced.

As with the trade-off between exploration and exploitation, there is a trade-off between declarative learning, and acting swiftly, and waiting for more knowledge in the form of procedural learning. Acting quickly based on declarative learning might put the company ahead of competitors, while waiting for procedural learning to take place might improve and refine the strategy.

Informal, experimental and permissible knowledge were assimilated in the creative motors. SRA noticed the mobile telephony developments by the Nordic telecommunication operators early on and also started its own explorations at an early stage. Primitive base stations and terminals were tested and procedural knowledge gained. Actors in the creative motor continuously interacted with external actors and noticed developments within the mobile telephony area.

Similarly, the creative motor in AGA was driven by explorative knowledge-assimilation practices. The "skunkwork" operated in all directions and assimilated information through multiple means. New units and subsidiaries were established early on, and new learning was acquired by so doing; thus, procedural knowledge of an explorative character was generated and assimilated. The creative motor in Couplet included experiments and procedural methods in trying to find out more about non-

mechanical coupling systems and electro hydraulic systems. Interaction with customers and other partners resulted in product exploration and product tests and simulations. At Pharmacia & Upjohn the creative motor involved activities of a related character; they were geared among other things towards investigations of the consumer and food product markets.

In summary, the creative motors included more exploration-oriented practices of knowledge assimilation, investigating new resources and markets. They involved declarative as well as procedural learning and knowledge. The declarative learning included informal and "haphazard" types of knowledge. Procedural learning in the creative motors was based more on exploratory experiments than on traditional industry experience and routines. An overview of the different types of knowledge and learning and some examples from the multiple retrospective and single in-depth studies regarding the creative strategy motors are provided below in Table 9.4. The different types of learning in the creative motors will be further analyzed and compared to those of adaptive motors in the next chapter. That chapter includes a description and examination of the adaptive strategy motors and an evaluation of another aspect of the motors, their collective cognitive structures. In addition, the confrontation and interaction between the two motors is analyzed.

	Creative motor	
	Exploration: investigating and developing strategic puzzle.	
Multiple retrospective study	Declarative learning (informal contacts and encounters)	Procedural learning (technology and market experiments)
Ericsson	Ad hoc recruitment of American cellular technology expert.	Trying to put together a mobile "system" for Saudi Tel.
Pharmacia & Upjohn	Noticing food industry marketing practices & employing from that industry.	Trying to market smoking cessation products directly to end consumers
AGA	Assimilating and buying local distribut. and gas technology knowledge and recruiting locally.	Approaching and working with former gas monopolies and individual locals.
Single in-depth study	Declarative learning	Procedural learning
Couplet	Assimilating hydraulic oil, pumps and other distant technologies.	Trying to develop a smaller "Mini coupling".

Table 9.4: Examples of different learning types in the creative strategy motors.

Chapter 10

THE ADAPTIVE STRATEGY MOTORS

10.1 Introduction

The prior chapter examined the *creative motors* in detail. Certain characteristics in terms of process character and learning dynamics were established. In this chapter *the adaptive strategy motors* are more closely examined and analyzed and the learning dynamics of the motors are further investigated. Each adaptive motor is described in detail and the illustrations are followed by an analysis of their general process character, location and learning dynamics characteristics. Another dimension of the strategy motors involved, besides knowledge-assimilation practices, are investigated as well, the collective cognitive structures. The two motors' managerial frameworks or collective cognitive structures and the influence of these factors on the strategic puzzles and issues, and their relationship to them, are examined. Next is an introductory overview of the general adaptive motor characteristics.

10.2 The Adaptive Motor – A Teleological Process

Corporate, Senior and/or Divisional Management dominated the adaptive strategy motors. The motors developed towards a final purpose or end state and the processes essentially involved four stages: first, a more or less vague dissatisfaction with prevailing strategy; secondly, an observation of, and confrontation and interaction with, new strategy developments in the firm, the creative motor; thirdly, an evaluation and general goal formulation concerning the new developments and, finally, implementation or rather acceptance of the new strategy. The process corresponds to a *teleological* ideal process type (Van de Ven and Scott Poole, 1995), involving a single unit and a constructive mode of change, implying that the change is discontinuous.

The four stages of the ideal process type are: *dissatisfaction, interact, envision goals and implement goals*. The adaptive strategy motors identified are described in the following sections in terms of each stage in the teleological process. The

descriptions start with a brief illustration of each motors' context. Please note that each individual cited is listed in Appendix B in terms of company, position and section of company. The adaptive motor descriptions are followed by a close-up investigation of their general learning dynamics characteristics, an examination of the knowledge-assimilation practices involved and an analysis of managerial frameworks or collective cognitive structures. Finally the friction between the adaptive and the creative motors are discussed. Table 10.1 provides an overview of the adaptive motors and the various stages involved in the teleological process.

<i>Multiple retrospective study</i>	<i>Location</i>	<i>Strategic focus</i>	<i>Strategic puzzle</i>	<i>Dissatisfaction</i>	<i>Interact</i>	<i>Envisioning goals</i>	<i>Implement goals</i>
Ericsson	Corporate Mgmt., Public Telecom. division	Fixed telephony telecommu- nications equipment.	Mobile Telephony/ Mobile Communic Systems.	Corporate strategic change and failure. (10.2.2)	Coping with mobile telephony (10.2.3)	Mobile telephony – one of several core products. (10.2.4)	Mobile telephony – centre of corporate strategy. (10.2.5)
Pharmacia & Upjohn	Corporate Mgmt., Rx pharmaceu divisions.	Prescription therapeutic areas,	Consumer Healthcare/ Smoking Cessation.	Merger and Acquisitions in the Swedish pharmaceutical industry. (10.3.2)	Keeping smoking cessation. (10.3.3)	Investments in smoking cessation and OTC. (10.3.4)	Consumer healthcare – core strategy. (10.3.5)
AGA	Corporate Mgmt., the Board.	Industrial gas industry business in Europe and America.	Eastern European Business/ Eastern Europe.	Changed strategy and changes in Eastern Europe (10.4.2)	Minor invest- ments in Eastern Europe. (10.4.3)	A plan – protecting the home region. (10.4.4)	Full entry into Eastern Europe. (10.4.5)
<i>Single in- depth study</i>		<i>Strategic focus</i>	<i>Strategic puzzle</i>	<i>Dissatisfaction</i>	<i>Interact</i>	<i>Envisioning goals</i>	<i>Implement goals</i>
Couplet	Corporate Mgmt., the Board.	Active- systems and trailer coupling mechanical systems stretchers.	Non- mechanical coupling systems/ Trailer surveillanc e systems	Consolidating the mechanical- systems industry. (4.2.4 – 4.2.8)	Looking into non- mechanical coupling systems. (4.2.4 – 4.2.8)	Investing in electro- hydraulic non- mechanical system R&D. (4.2.4 – 4.2.8)	Trailer surveil- lance systems – core strategy. (4.2.4 – 4.2.8)

Table 10.1: An overview of the adaptive motors and the teleological stages and a comparison with the single in-depth study (numbers refer to sections in text).

10.3 The Adaptive Strategy Motor in Ericsson

10.3.1 Ericsson – A Public Telecommunications Company with AXE as the Flagship Product

The main products of Ericsson had traditionally been switching and transmission equipment. This continued to be so during the 1970's. All major R&D was invested in switching. The PTTs (Post Telephone & Telegraph)²¹⁶ were the principal markets for these products. Roughly a dozen telecommunications companies dominated the world market (AT&T, Ericsson, CIT-Alcatel, Fujitsu, Hitachi, ITT, NEC, OKI, Plessey, Siemens, Strowger). They competed for orders from the PTTs where markets were open. The US was still closed and the British PTT bought only from British companies. Similar arrangements prevailed in many other markets.

Political considerations often played a larger role than commercial or technological ones. Once a relationship had been built with a PTT, it usually lasted very long with continuous follow up contracts: "...the vendor-customer relationship could often be described as marriage-like: once a PTT had made its system choice - or often vendor choice, which might go back to the beginning of the century - the relationship was expected to continue for a long time" (Meurling and Jeans, 1995, p.87).

Competition was limited: "Not many countries were supplied by one manufacturer only, but very few countries had more than two or three....for most companies it was cozy" (Meurling and Jeans, 1995, p.189). Even if Ericsson had one of the least 'cozy' positions, since the Swedish PTT manufactured most of its own switches, their culture and way of doing business reflected the prevalent stable and semi-competitive environment. The PTTs were bureaucracies filled with engineers which "...enjoyed spending time discussing technical matters, arguing about the merits and demerits of different solutions" and "Customer relations became very much a matter of engineers discussing technical matters with engineers" (Meurling and Jeans, 1995, p.206).

However, there was a part of Ericsson, although not wholly owned and quite remote both in terms of technology and products, which actually had spent its whole

²¹⁶ PTT refers to Post, Telephone and Telegraph, which were the traditional government organisations or monopolies responsible for running a country's postal and telecommunications services.

60 year history in a more non-protected and quite competitive business environment, namely SRA. Most managers at Ericsson did not know much about SRA; it was a minor, independent and pretty unglamorous business: "Within... Ericsson...awareness of SRA and ERA came late". "We [Public Telecom] were the biggest, the most important, and the most beautiful part of the Ericsson Group - and we knew it" (Meurling and Jeans, 1994b, p.47).

In the 1960s electronics became important in telecommunication, and computer-controlled switching systems started to surface. The Swedish PTT together with Ericsson formed a joint company to develop a digital switch, the AXE switching system. Ericsson's introduction of digital switching at an early stage - the company was ahead of its competitors -turned out successfully. AXE became widely known and well respected and contracts in 26 countries had been signed by 1980. Even the formerly closed and now competitive UK and US markets were subsequently entered in 1985 and 1986, respectively, in large part thanks to the ongoing liberalization process in telecommunications. The breakthrough into these markets, outside Ericsson's old sphere of customers, signified a major change.

Interestingly enough, AXE switches had already been installed some years earlier in both these markets by SRA in their mobile telephony systems. However, for the rest of Ericsson, mobile telephony "was still seen as something not very serious - a service for the privileged." (Meurling and Jeans, 1995, pp. 273-274). Hence, as historically, the switching business was central, and other Ericsson businesses were considered as peripheral and unimportant, especially the obscure SRA business with its "oddballs". Meurling and Jeans (1995, p.99) writes in relation to the special attention given to the switching business and the launch of AXE during the centenary celebrations in 1976: "But Ericsson's largest product area was the telephone exchange business. This was what it was famous for, this was where it had made its most important contributions to the art." This situation continued for the next ten years. AXE was the flagship of Ericsson and Public Telecommunications was its captain.

10.3.2 Dissatisfaction: Corporate Strategic Change and Failure

AXE had established itself as a major product and had achieved great success on a range of markets by 1980. Everything looked rosy for corporate management and the Public Communication area, including the bottom line. Now corporate management started to think boldly about a new expansionist strategy, a way to use the cash generated by AXE and more mature businesses like the cable business. Information technology, the merger between computer and telecommunication technology, was the wave of the future, according to many actors in the industry. Computer technology had already started to invade the telecommunications industry, and it was believed that this would continue at an increasing rate. Ericsson was to participate in this vision in order to create the future office - the paperless office. The new venture was lead by CEO Björn Svedberg, and Ericsson Information Systems, EIS, was created in 1981. Håkan Ledin became the President of the business area Information System that included EIS. It was forecasted to grow by approximately 20% a year and account for about 20% of total sales in a few years (Dahlgren and Witt, 1988, p. 265 and 289).

In 1982 the name of the company for 100 years, 'L M Ericsson', was changed to simply 'Ericsson,' and the logotype was changed from an old style emblem to a modern stylized E. The new diversification strategy included two new sub-strategies. The first was to assimilate competence and grow through acquisitions. Datasaab, the computer division of Wheelright and Facit, an office machine manufacturer were acquired. The second was to enter the US in a joint venture with a US oil corporation, Atlantic Richfield, also known as ARCO. ARCO contributed with their Anaconda cable manufacturing business and a division selling office telephone switchboards, PBXs, and other related products.

In 1983 Ericsson carried out a major stock issue, \$240 M in the US market. The forecast was that EIS would be as big as the Public Telecommunications business area by 1990. Profit goals were more vague. Both the computer business (Datasaab) and the switchboard (PBX) business, which were core parts of EIS, were highly unprofitable.²¹⁷ In 1984 they started to manufacture IBM-compatible PCs. Corporate management was totally focused on EIS and meanwhile SRA could work undisturbed

²¹⁷ According to the President, Håkan Ledin: "Of course the zero profit goal established earlier remains." (The employees' paper 'Kontakt', 810903, quoted in Dahlgren and Witt, 1988, p.290) and

with mobile telephony in their own way: "The company's strategy was dominated by information technology, which meant that SRA could trot along undisturbed in their own mode. It [mobile telephony] happened in the shadow of more important things." [John Meurling, head of Public Relations at the time].²¹⁸ Not even Public Telecom cared much about SRA: "...we were more concerned about being overtaken by the new Ericsson comet, Information Systems." (Meurling and Jeans, 1994b, p.47).

EIS was a diversification in the word's true sense. It involved entirely new products, a move from nationwide telecommunication equipment to office machinery²¹⁹, and completely new markets, moving from governments to individual private clients. It was a major strategic change. EIS met its goals in terms of company growth, from 23% 1982 to 31% 1985, but the market growth predictions faltered immensely and so did profit expectations. Profits were up in 1983, but in the third quarter of 1984 Ericsson shocked the stock market with a negative report. Losses at EIS were 217M SEK in 1984 and 806M SEK in 1985. Nevertheless, Public Telecommunications business was still making money. EIS was restructured, but it took several years to repair the damage. Break-even was reached in 1987, and in 1988 the PC and data terminal businesses were sold off to Finnish Nokia. Meanwhile SRA and mobile telephony had been largely left aside, and when they were bothered, Åke Lundqvist, President of SRA, fought the botherers off: "He kept corporate management away when they troubled us" [Jöran Hoff, leader of product development (US mobile system)].

If SRA initially had an obscure and not entirely successful strategy for mobile telephony, it was not on Ericsson's strategic map at all: "You can forget strategic planning on the corporate level!" [Åke Lundqvist, President of SRA at the time]. The fact that Ericsson first entered mobile telephony and received an order for switches for NMT was not solely based on their own merit. In fact mobile telephony was rather low on the priority list. It was the Nordic PTTs which set up NMT, and they pulled

²¹⁷ "...the goal is to reach profitability 1984 at the latest." (LME, 1982).

²¹⁸ John Meurling has written several books on Ericsson (Meurling and Jeans, 1995; 1994a/b; 1997a/b), which are among the sources used for this study.

²¹⁹ EIS initially had four divisions: Communication Systems (business switch from Ericsson, MD 110, and network communications), Business Systems (Datasaab bank terminals and mini computers), Alfaskop Terminals (Datasaab computer terminals) and General Terminals (Facit equipment, voice, text and computer systems).

the suppliers with them in that development process.²²⁰: "NMT was given to Ericsson" and "It is peculiar, but Ericsson did not believe in it [mobile telephony], no one there saw the opportunities" [Bertil Bjurel, Director General of Tilverket (The Swedish Telecommunications Administration/Swedish PTT) at the time].

Ericsson's unwillingness to participate can also be explained by some financial difficulties: "Ericsson had some financial problems after the oil crisis in the mid-1970's, and there was also a historic animosity between the engineers in the two entities [Ericsson and the PTT]" [Håkan Ledin, Director of switching division, later President of Ericsson Information Systems - EIS]. In the development of NMT the Swedish PTT actually approached Ericsson several times regarding technology development, components etc., but "...they were very negative, they thought it was meaningless, they said no" [Bertil Bjurel]. Instead the PTT turned to the Japanese who were happy to cooperate.

Once in the discussion, Ericsson's switch division (named X or BX) was hesitant to offer AXE-based switches. Åke Lundqvist, President of SRA, tried to convince them: "X Division [switch division], headed at the time by Håkan Ledin, was reluctant. X had its hands full bringing AXE to the market" (Meurling and Jeans, 1995, p. 198). An adjusted AXE switch for mobile telecommunication was simply seen to have a limited future. The switch division suggested AKE, an analogue electromechanical, although computer-controlled, switch from the early 1970's. However, the Swedish PTT insisted on Ericsson's latest technology, AXE.

The long-term relationship with the Swedish PTT, Tilverket, played a role in obtaining the order. The move finally to supply switches was more in order to preserve old relations than enthusiastically to enter a new market: "They wanted to keep up the good relations with the Nordic PTTs ...there was a symbiosis between us and the operators [PTTs]" [Christer Ihse, programdeveloper X division, later project leader for mobile systems in England]. It was only natural for Ericsson to deliver switches to NMT. It was part of regular business activities "not at all a big issue for

²²⁰ NMT was initiated by the Nordic PTTs, but the initiative from the start came from engineers within the Swedish PTT. The project was engineer-driven, the PTT management having very little involvement in the innovation process. In this case, as in earlier technological developments made by the Swedish PTT, management played a minor role. The reason behind the innovative activities within the PTT was that the individual engineers were allowed to sell their patents and that way made money. Patents were sold to in Sweden to Ericsson and others, but also abroad.

corporate management" [John Meurling]. Furthermore, AXE had been developed together with the Swedish PTT and they would have considered it a failure if they could not have used it in the NMT system, even though any "national industrial policy" is denied by the PTT itself (McKelvey et al., 1997, pp. 26-27).

Since switch and radio technology were offered separately for the Nordic NMT, but with SRA having the marketing responsibility, the rest of Ericsson did not have to be too involved with the "cowboys" and "amateurs" at SRA. However, in other markets it became increasingly frustrating since SRA insisted on more coordination and wanted to sell a more integrated mobile telephony system. Hence, SRA with not quite 2,500 employees and 4% of total sales (LME, 1980) wanted to be in charge of Ericsson's flagship product AXE for mobile systems.

The rest of Ericsson did not think much of the SRA personnel: "We were considered as lacking in knowledge, stupid and inexperienced." [Jöran Hoff]. Attempting to exploit mobile telephony applications was more trouble than it was worth for many at BX. Similarly, it was not obvious for corporate management that mobile telephony was a promising and coming market. There were no indications in terms of market investigations or any other indicators.

10.3.3 *Interact: Coping With Mobile Telephony*

In the arrangement with the PTT in the Netherlands, the conflict between SRA and the rest of Ericsson, especially switching, reached something of a climax. SRA's President Åke Lundqvist had forced the PTT and the rest of Ericsson into offering Ericsson's switches and SRA's base stations or nothing, and not to accepting the involvement of Motorola base-stations. He received the support of the switching division, but it was a hard sell to the PTT. The "take it all or leave it all" position of SRA and Åke Lundqvist made some switching people upset, especially as SRA hardly had anything to contribute themselves. SRA was not ready either in terms of products - their base station was not fully developed - nor in terms of competence - they did not have the required cellular planning technology. Åke Persson from the switching division joined SRA and their American radio consultants in Holland: "That is a thriller, it was terrible... Then I was here at SRA and I met Åke Lundqvist for the first

time...and they were absolutely lost...They did not really understand, they made base stations and there was not much to it, I think...I sat in a conference room listening to loads of Americans and wondered, Can this be true?" (Åke Persson cited in McKelvey et al., 1997, p.35).

It had to be decided whether Public Telecommunications should invest in mobile telephony or if this mission should be left to SRA. The discussions were heated, although BX (switch division) only saw a limited future for AXE in mobile telephone networks. Finally, it was left to SRA, with BX in charge of the switch, receiving a commission from SRA. Åke Persson came from BX to ERA to be responsible for creating-mobile-telephony switch software development in 1982²²¹ : "The reason was not lack of competence. They [BX] simply did not believe in this" [Åke Persson]. From corporate management's point of view "...strategic focus was on information systems [EIS] in 1981, 1982, and 1983" [John Meurling]. Subsequently, a more or less a purely business relationship between SRA and the switch unit prevailed rather than an organizational relationship. Friction remained, especially concerning switch commissions. AXE was an advanced high-capacity digital switch, and BX felt that the high capacity had to be reflected in the price. Discussions over the size and the price of the switch continued for years (Meurling and Jeans, 1994b).

Ericsson's corporate management did not quite believe in mobile telephony when SRA entered the US, "...this will not be a major business, that was actually their position, it was a minor event in future telecommunications" [Åke Persson]. The American market was not developed regarding mobile telephony and, again, there were no signs that mobile telephony systems would become a major telecommunications product, quite the contrary. In the rest of Ericsson it was felt that SRA really did not understand the technology. In particular they did not understand the importance of the switch and that they were in the business of telephony, not radio. Åke Lundqvist, cited in Meurling and Jeans (1994b, p. 191): "Isn't it strange - that that damn switch has to be so important!" However, SRA's plans for a switch of

²²¹ Approximately 40% of Ericsson's mobile telephony has been spent in AXE software. Over the years a half dozen managers from BX came to ERA for software development (Meurling and Jeans, 1994b, p. 52).

its own had to be cancelled. They did not have the competence and, AXE was needed for capacity reasons. Hence, BX had to assist SRA in the US venture, despite their own burdensome US entry on the fixed side. In other markets SRA also used Ericsson's switch, AXE, and, in addition, their market organization in order to conquer market shares. In that respect they were considered something of a freeloader and even parasite. It was felt however, that SRA had learnt in the Netherlands deal that they needed to offer a complete system, including sophisticated switches, base stations, etc. and in addition, that they needed professional support in terms of cellular planning, etc.

When Ericsson bought out Marconi's shares early 1983 and SRA became a wholly owned subsidiary, ERA, these steps did not imply a change in corporate strategy in terms of increased focus on ERA and mobile telephony. Rather, one of the main reasons was that Marconi was owned by GSC General Electric, which competed with BX, the Public Telecommunications and switching area (Mölleryd, 1996, p.83). In addition, it increased corporate management's control over the undisciplined unit.

The whole Ericsson group was reorganized at that time into various business areas. ERA was the main part of the Radio Communications, BR, business area. For the next three years the business area showed great growth and good profit records except in 1984, especially in mobile telephony systems. Sales increased from around 5% to 8% of total Ericsson sales. However, despite their market success and growth, ERA was still "considered as something the cat dragged in" by some people on the switch side [ERA Senior Manager]. And mobile telephony did not play a role for corporate management either: "We were perceived as horse traders!" [Åke Lundqvist].

From corporate management's point of view SRA was not considered to have a strategy. Björn Svedberg, CEO of Ericsson, criticized SRA's strategy for being "completely absent". There even seemed to be talks about getting rid of ERA altogether during the crisis in Ericsson: "It was most probably discussed...I am sure someone tried to strangle us" [Jöran Hoff]. Hence, ERA continued to be considered a back-yard operation in the mid 1980's (Meurling and Jeans, 1995, p. 273). The Public Telecommunications business area dominated Ericsson and accounted for around 40% of the Ericsson Group's sales throughout the 1980's. It also dominated corporate management, which was recruited from that area. Commenting on experiences of the

"core group", Ericsson's Executive Committee, Dahlgren and Witt write (1988, p. 208): "It is also striking that the management's practical experience almost entirely comes from the 'public' [telecommunication] part of LME [Ericsson]. With a couple of exceptions not one of the managers interviewed has been employed by any of LME's subsidiaries."

10.3.4 *Envision Goals: Mobile Telephony – one of Several Core Products*

In 1986 Lars Ramqvist, former President of the Components business area, became Vice President, one of three, and part of the Ericsson Corporate Executive Committee. He was assigned to examine Ericsson's corporate strategy: "Its condition was analyzed in detail, its strengths and weaknesses were charted, and its position in relation to its competitors was evaluated for the different business areas, their products and markets" (Meurling and Jeans, 1995, p.211). Ramqvist identified several core businesses in the corporation and stressed the importance of strategic alliances in certain areas. Whole ranges of products were considered "core products": AXE, MD110 - an office switchboard, a platform for operations and management systems, various transmission systems, and diverse products and businesses in microelectronics, defence and optical-fibre technology.

Among all the different core businesses, mobile telephony was included, although: "The AXE switching system was still the flagship..." (Meurling and Jeans, 1995, p.211-212). Mobile telephony was only one out of a long list of "core products;" its establishment seemed more to be a way to separate out information systems products as after-care for the EIS (Ericsson Information Systems) failure. But at least it was acknowledged, not only "acceptable," but perhaps even "accepted." For the first time "...cellular was seen as a legitimate, worthwhile, even important, part of Ericsson's business" (Meurling and Jeans, 1994b, p.188). However, "...there was a great deal of lack of understanding and distrust left, even if more people saw its importance... 'those damn cowboys'...and at ERA they said 'those damn bureaucrats'" [John Meurling].

Contributing to continued tensions was the cooperation between French Matra and Ericsson on a GSM mobile telephone system in 1987. Base stations were to come from Matra and switches from Ericsson. This clearly irritated the ERA people: "At

that time mobile telephony was still not seen as important!" [Jöran Hoff]. Based on the strategic direction chosen, Ericsson's activities were focused and unrelated areas sold off; essentially they left the "information system" business and turned to telecommunications again: "Operations have now been concentrated to the corporation's areas of greatest strength with telecommunication in the centre" (CEO Björn Svedberg, LME 1987).

There had been some friction between CEO Björn Svedberg and Åke Lundqvist: "Åke could not get the hang of things...he had no understanding concerning orderliness" [Åke Persson]. It resulted in a personal disagreement and Åke Lundqvist resigned: "It was due to divergent views regarding the successor. And Ramqvist was to be made known as well" [Åke Lundqvist]. Lars Ramqvist was appointed President of the Radio Communications business area in 1988. The entire responsibility for mobile telephony systems, including switches, but excluding GSM development, was moved to Radio Communications: "When Ramqvist arrived we got more freedom. Some people disappeared then. Åke Lundqvist moved away... But it is unclear if it was a strategic undertaking even at that time" [Jöran Hoff].

10.3.5 *Implement Goals: Mobile Telephony – Centre of Corporate Strategy*

Radio Communications sales increased by almost 70% between 1988 and 1989; that year it accounted for 20% of total sales. It rapidly approached the level of Public Telecommunications sales. It was a business to be taken seriously and more and more people did so, including corporate management, even if "It took a very long time before Ericsson woke up" [Bertil Bjurel]. It was a sign that Radio Communications had become more important when its President, Lars Ramqvist was appointed CEO of Ericsson in 1990.

In the introduction to the Ericsson World Management Seminar that same year (Ericsson in the 90s, 1990), Lars Ramqvist commented: "...another goal is to make Ericsson the number one radio company in the world". This marked the importance which Radio Communications had attained by this time, at least for corporate management even if not for everyone in Public Telecommunications. In addition, mobile telephone systems had a more prominent standing in the "Chief Executive's Comments" of the annual report in 1990 than earlier, when it had been more or less

neglected. Lars Ramqvist emphasized the success in mobile telephony, and AXE was highlighted not only as main part of Ericsson's business, but also as a subpart of the mobile systems: "This [success in mobile telephony] also positively affects Public Telecommunications, since the AXE exchange is an important part of these systems" (Lars Ramqvist, LME, 1990).

Earlier CEO Björn Svedberg had primarily emphasized Public Telecommunications, but from now on mobile telephony played a more and more important role. Corporate management continued the prior strategic emphasis on core businesses and strategic alliances. However, it would take a couple of years yet before mobile telephones were considered the core strategy at Ericsson. Ramqvist wanted Radio Communications to enter all mobile telephony standards which required considerable R&D spending: "The first strategy according to my interpretation was to try to enter all markets, all standards" [John Meurling]. "I had to explain to shareholders that I was proposing to increase R&D costs very considerably, possibly by as much as 50% a year over two years" [Lars Ramqvist, President and CEO Ericsson].²²²

In 1992, GSM development was moved in under the roof of Radio Communications, and the business area surpassed Public Telecommunication in sales. Now there was no doubt that mobile telephone systems were a strategic and important part of Ericsson. There had been a certain flow of people from the switching division since the mid 1980s, but after 1992 there was a "virtual migration" [John Meurling]. The diversity in cultures subsequently became an advantage as well, later resulting in a merger of the cultures: "Merging the two cultures from a market point of view was successful" [John Meurling]. ERA was rehabilitated: "Ericsson's success in mobile telephony is based on the very *farsighted* and *advanced* development work in the field of radio that was begun at an early stage within Ericsson Radio Systems [ERA]" (LME, 1994, emphasis added).

By 1994, Radio Communication accounted for more than 50% of Ericsson's sales and almost 30% of its work force. Radio Communications was the main product area and mobile telephone systems was its flagship. Later mobile telephones and

²²² Lars Ramqvist interviewed in 'International Management', 1994, p. 27, cited in McKelvey et al., 1997, pp.51-52.

terminals were to be another flagship. The tremendous growth of Mobile Systems continued during 1995 and 1996: "The past five years have been a period of uninterrupted expansion for Ericsson...As in earlier years, our operations in mobile telephony, in particular, continued to expand sharply. Sales of both systems and mobile telephones increased nearly 50 percent in 1996" [Lars Ramqvist, Chief Executive Officer's Comments, LME 1996]. In 1997, Mobile Systems accounted for 44% of sales and Mobile Telephones and Terminals for 26%, and mobile telephony's share of sales was steadily increasing.

10.4 The Adaptive Strategy Motor at Pharmacia & Upjohn

10.4.1 Leo, Pharmacia, KabiPharmacia, Pharmacia (II), Pharmacia & Upjohn: Consolidation in the Swedish, European and US Pharmaceutical Industry

Leo was a highly innovative pharmaceutical company focused on prescription-niche pharmaceutical products. The company had particular competencies in cancer therapeutics. Its largest product was Estracyt, a prostate cancer therapeutic launched in 1972. Compared to high prestige cancer therapeutics, smoking cessation was insignificant. The main focus was on prescription pharmaceuticals and remaining a dominant actor in the pharmaceutical industry. It was with mixed feelings that corporate management, mostly managers with backgrounds in prescription drugs, regarded Leo's smoking-cessation brand, Nicorette, which was accounting for more and more of company sales. It clearly had a completely different character compared to other products and required different resources.

Pharmacia acquired companies for over five billion SEK in 1986. The biggest was the Leo acquisition for three billion SEK, which almost doubled Pharmacia's sales in the pharmaceutical area. Leo had a sales of 929 MSEK and the sales of Pharmacia's pharmaceutical group were 1,012 MSEK. Pharmacia, headed by Erik Danielsson, had a successful growth and profit record during the early and mid-1980's. The company was divided into two main segments, Biotechnology and Health care. Pharmacia had high ambitions for biotechnology. It focused on methods and systems for biotechnological purification and separation, as well as molecular biology, in order to become a leading company in the "new biology".

The main emphasis was on biotechnology, but it was also to be used as a foundation in the other areas: "The core in our research strategy is also to use the biotechnology research base in the diagnostics and pharmaceutical areas" (Erik Danielsson, President's Statement, Pharmacia, 1985). The acquisition of Leo was argued to involve a range of different synergies. The primary motive was to strengthen Pharmacia's market, product and research in traditional pharmaceutical areas: "Pharmacia's more biologically and biomedically directed research will be combined and complemented with Leo's strong competence in, among other things, organic chemistry, pharmacology and pharmacy" (Pharmacia, 1986, p.27). The main focus at Pharmacia, as at Leo, was on high-prestige, high-margin prescription pharmaceuticals and OTC products. Smoking cessation was considered relatively unimportant, even more so at Pharmacia than at Leo.

In December 1989 it was announced that Procordia, a state owned conglomerate, would buy Pharmacia (-Leo) and Provendora (a food industry group) from Roadstar. Procordia was divided into three different business areas: Health care, Food and Service. The Health care area was headed by Erik Danielsson from Pharmacia and included two main sections, Pharmaceuticals and Biosystems. Pharmacia (-Leo) was merged with KabiVitrum, a pharmaceutical company in the Procordia group.

KabiVitrum, a Swedish state-owned pharmaceutical company, had run into severe financial difficulties in the mid 1980's. The President Jan Ekberg led a turnaround and mergers and acquisitions program in order to strengthen and enlarge the company: "According to Kabi's visions in 1987, the company should reach sales of 7.5-10 billion SEK by 1994 and have a research volume of 1.2-1.5 billion. Through the merger with Pharmacia (-Leo) these levels were reached in one stroke and much earlier - by 1990" (Östman, 1994, p.147). Kabi had taken an active role in the consolidation process of the Swedish pharmaceutical industry, and the Pharmacia acquisition was the last piece in that process. Jan Ekberg headed the pharmaceutical section of the Procordia Health care area. The primary reason for the acquisition was that if kept separate the two companies would be too small. Together they would be stronger in market terms and, in particular, in terms of R&D capabilities. In addition, they complemented each other in some areas. Pharmaceuticals and health care at

KabiVitrum had a sales of four billion SEK, and Pharmacia's sales were approximately seven billion SEK.

The consolidation continued with the focus on prescription pharmaceuticals. Kabi Pharmacia announced in December, 1991, that they had acquired 72% of the shares in the Italian pharmaceutical company Pierrel (Pierrel SpA.) from Swedish Fermenta. The company had a sales of 880 MSEK and 900 employees, and its main products were growth hormones and nutrition products. A stronger market position was gained in the Italian market. As in the prior mergers, OTC products did not have any role in the acquisition. In May 1993, Procordia acquired 51% of the shares in Farmitalia Carlo Erba, which was to be integrated into Kabi Pharmacia. It was one of the largest foreign acquisitions made by a Swedish company. The acquisition put Kabi Pharmacia among the ten largest pharmaceutical companies in Europe.

In June, 1993, Procordia presented an agreement between the principal owners, Roadstar and the Swedish state, to split Procordia into two groups. Food and consumer products, Branded Consumer products (BCP), were transferred to Roadstar, and the remaining part was focused on pharmaceuticals and biotechnology under the name of Pharmacia, headed by Jan Ekberg: "The reason given was that concentration of operations would strengthen the possibilities of development for both parts and that privatization of Procordia would be facilitated" (President's Statement, Procordia, 1993).

The consolidation process at Pharmacia then crossed the Atlantic, and a merger between Pharmacia and the American pharmaceutical company Upjohn was concluded in the fall of 1995: "Pharmacia & Upjohn was created in the autumn of 1995 under the belief that the most successful pharmaceutical companies would be those with sufficient resources to develop innovative new medicines in areas where medical needs are particularly great or where current treatment methods are insufficient" (CEOs introduction, Company presentation Pharmacia & Upjohn, 1995).

The prescription pharmaceutical areas were organized into a matrix of three Pharma Product Centres (Italy, Sweden, USA) and three market regions (Americas, Asia-Pacific, Europe). The other activities, including "Associated Businesses" (animal health, diagnostics, biotech, etc.) and Consumer Healthcare, were organized independently. Prescription pharmaceuticals were still the centerpiece, but during the

whole consolidation process one unit had persistently worked on continuous expansion in consumer and OTC products, and smoking-cessation products in particular.

10.4.2 Dissatisfaction: Mergers and Acquisitions in the Swedish Pharmaceutical Industry

The development of a chewing gum in combination with an addictive poison, nicotine, did not really fit in the context of highly innovative and advanced cancer research. Naturally, the climate was not sympathetic for the researcher, Ove Fernö, who invented the smoking-cessation chewing gum. Several times it was discussed whether the project should be closed down or alternatively be transferred somewhere else, an uncertainty which several projects had to live with. From a corporate management point of view, a selection had to be made among projects since resources were scarce. However, the project being so small, only a couple of researchers were involved initially; it did not play a major role in the company at the outset, and no one really believed that anything more would come of it.

Over time, however, it became an increasing problem since it competed for resources with other areas. It caused debates over the soundness of a pharmaceutical company selling a addictive poison. The question could be raised whether Nicorette did not belong to the nicotine industry rather than the smoking-cessation industry. Many at Leo and in the pharmaceutical industry in general thought that nicotine chewing gum was not a pharmaceutical product and had no place in a pharmaceutical company.

The only extenuating circumstances, in their view, was that it was aimed at preventing cancer since it assisted people who were trying to stop smoking, a point which Ove Fernö, Lennart Sorelius, Marketing Manager, and other Nicorette proponents always were ready to stress: "To prevent cancer, lung cancer, was a major driving force and argument" [Lennart Sorelius, Export Director Leo later President Nicorette].

The controversies surrounding the smoking-cessation product did not end after the launch in Switzerland 1978. In Sweden the distributor and primary outlet, the

state-owned pharmacies, were not particularly interested or favorable towards Nicorette, either, since it was essentially considered an addictive poison. At the time, smoking cessation was not a major subject in the public health debate. Some remarked that not even the tobacco industry was interested. It had been approached, and an agreement was set up, but they turned it down after pressure from politicians.

The team behind Nicorette pushed for more and more marketing investments as Nicorette was to be launched in new markets and as sales increased. The investments were questioned, partly because some of the market investments deviated from the traditional marketing activities used in selling pharmaceuticals and concerned marketing directed at end customers, more like OTC marketing. The question was whether it was reasonable for Leo to make those kinds of marketing investments. The company was focused on traditional pharmaceutical drugs and did not have extensive international sales and distribution capabilities, especially not for OTC-related products. Distribution and marketing in international markets were solved via international license agreements.

Leo had a tradition of licensing their products internationally instead of establishing themselves in international markets. This appeared to a particularly good solution, since Leo was not an OTC company and had no intention of becoming one. Nicorette was a prescription product and corporate management had no special focus or thoughts on entering the international OTC market: "There were strong forces at AB Leo which did *not* want the company to develop towards non-prescription smoking-cessation products. The background was that many at AB Leo saw the smoking-cessation area as less prestigious than, for example, the company's cancer research area. As a non-prescription product, Nicorette's status as a scientifically tested pharmaceutical would be undermined, as would its role in the company's product portfolio, according to the critics"²²³ (Urde, 1997, p. 270). Marketing was initially focused on information concerning various smoking-related health risks. Presentations were made to physicians and pharmacists at conferences. A primary goal was to establish Nicorette as a serious therapy.

²²³ Translated from a dissertation presented at Lund University on branding and brand orientation, including the Nicorette case (Urde, 1997).

In general Nicorette played a minor role in the perspective of corporate strategies. The main strategic focus for corporate management was on developing traditional pharmaceutical products within its principal niche areas and on taking part in the ongoing consolidation of the Swedish pharmaceutical industry.

Leo was sold to Sonesson in 1983, which later acquired another pharmaceutical company, Ferrosan, situated in the very southern part of Sweden in Malmö. Although the Leo/Ferrosan combination was essentially kept as two separate entities, there was some friction between them (Wijkström, 1991/A). Nicorette was not a major strategic element in the merger and acquisition activities. The emphasis was on strengthening the research and the traditional prescription product portfolio.

Another objective was to prepare for internationalization of the company. Jörgen Johnsson (later President for Consumer Healthcare) was assigned to renegotiate and terminate many of the prior licensing arrangements in order to internationalize Leo. While the core strategy focused on other matters, Nicorette had achieved surprisingly high sales figures by the mid 1980's, especially internationally. In particular the launch in the US 1984 resulted in a sharp sales increase. Nicorette became Leo's largest product.

Even though it had become successful, however, it was questionable if a pharmaceutical company should deal with it. It was felt that it fit in better in a tobacco industry or more consumer-oriented context and not among ethical drugs. It was considered as an important product, but the question was whether it was to be kept within Leo and within a pharmaceutical industry setting. It was thought that sales had perhaps peaked and that Nicorette was ripe for sale, and it could be questioned whether Leo and the pharmaceutical industry provided the best environment for Nicorette. There was no divestiture at that time, however, since the Swedish pharmaceutical consolidation process continued and another acquisition was made. This time it was Leo/Ferrosan's turn to be acquired by Pharmacia.

10.4.2 *Interact: Keeping Smoking Cessation*

Pharmacia made several major acquisitions in 1986. The major one was the acquisition of Leo. Nicorette played a limited role in Pharmacia's acquisition of Leo.

There were no synergies as regards Nicorette, but it was not divested. Managers in Leo were not particularly enthusiastic about being acquired by Pharmacia. A lot of management energy was focused on the integration process. A "north-south conflict" surfaced between Pharmacia, north in Uppsala, and Leo, south in Helsingborg (Wijkström, 1991/B2). The pharmaceutical sections of the two companies were merged into "Pharmacia Leo Therapeutics" under the directorship of Per-Olof Mårtensson, formerly President of Leo.

Leo, which was financially very strong but still largely a national company at the time, saw primarily one advantage to the acquisition. It was the opportunity to use Pharmacia's international strength to market Leo's products. However, this expectation met with disappointment: "In reality this organisation [the international organisation of Pharmacia] turned out to be highly overrated" (Per-Olof Mårtensson in Wijkström, 1991/A, p.13). The international market organization aspect played no role as regards Nicorette; most of its international distribution rights had previously been transferred to others, since: "the product...requires a large marketing capacity. Approximately 90% of Pharmacia's [Nicorette] sales are therefore channeled through exclusive distributors" (Pharmacia, 1987, p.22).

A plan for the integration of the two units in the Pharmacia pharmaceutical group was developed. Nicorette was managed as a separate market division. The different therapeutic areas were divided into "strategic", "established", "exploratory" and "divestiture" areas in 1988. Tumour and inflammatory therapeutics and pharmaceutical supply systems were included in the strategic group. Nicorette and three other therapeutic areas were put in the established area.

The support came primarily from the Leo side of the merger, while there was decided opposition at Pharmacia. Researchers and managers in the pharmaceutical area at Pharmacia clearly did not appreciate Nicorette, and more resistance was to come. Pharmacia ran into some financial problems in the end of the 1980's and there was considerable criticism of Pharmacia's corporate management.

One remark was that the management did not have an industrial or company perspective, but was influenced more by an academic culture based on the closely integrated relationship between Pharmacia and Uppsala University (Wijkström, 1991/A). Another observation was that corporate management was too homogeneous:

"The corporate management of Pharmacia was characterized by 'group-think'. It was such a homogeneous group which knew what the world looked like and what to do that nobody questioned what they really were doing" (Solveig Bruce-Stupples, Pharmacia Great Britain, in Wijkström, 1991/A, appendix IV, p.16).

In 1989 Procordia, a state owned conglomerate, bought Pharmacia and merged it with Procordia's own pharmaceutical company, Kabi Vitrum. Nicorette did not play any major role in this merger either, other than accounting for a substantial part of Pharmacia (Leo's) sales. Procordia's Health care area was divided into biosystems, Pharmacia Biosystems and pharmaceuticals, Kabi Pharmacia, which was headed by Jan Ekberg from Kabi Vitrum.

Kabi Pharmacia was divided into five separate companies, of which Therapeutics was one, with a sales of almost two billion SEK. It was headed by Håkan Åström and included five business units: gastro/rheuma, oncology, central nervous system, urology/gynecology and smoking cessation. Smoking Cessation, or Nicorette was headed by Jörgen Johnsson. Another of the Kabi Pharmacia Health care companies was Nordic Pharmaceuticals, where all the OTC products were placed, including pharmaceuticals for cardiovascular diseases and pain and skin care products.

Nicorette was regarded as something of an oddity in the therapeutic sector and was placed as a separate business unit. It was questioned by some in therapeutics. It was still thought of as an addictive poison, and its position in a pharmaceutical context was doubtful. It could also be questioned whether the market really was there. Even if sales in certain markets had been impressive, sales and profits were not as significant as for several other pharmaceuticals.

Over time it became clear that OTC would become an important distribution channel for Nicorette. Since this included marketing directly to consumers, Nicorette required completely different marketing and distribution capabilities. In most instances it was necessary to invest in complementary or separate sales forces and distribution infrastructure. It required much more market and marketing investments and relatively less in terms of traditional pharmaceutical research investments.

It was an altogether different logic in terms of development, production, marketing and also in terms of distribution for countries where OTC products can be sold outside pharmacies. According to many, this logic simply did not match the

pharmaceutical industry and was more appropriate for consumer products: "When the product [Nicorette] is distributed and sold more via supermarkets and those kinds of outlets, one wonders whether others will not take over, such as Wrigley's or the tobacco companies" [Sven Waldenström, at the time President of ACO, later Nordic Self Care].

Apart from being another business unit which fought for its existence and budgets, Nicorette did not initially attract much attention from corporate management in the Health care section. The main focus was on the merger processes and balancing all the different units within the Health care section: "Everybody claimed that they were receiving too little money, but the problem was that there were too many projects. We cut down on the projects and left enough money for those that were left." (Håkan Åström in Wijkström, 1991(B2, p.9). It was clear that Nicorette and other OTC products were not a particularly prioritized areas, the focus was on the traditional therapeutical areas: "We have not suggested closing down any therapeutic area, but we suggest cut-backs and a strong focus...The main focus will be on Cancer, Uro/Gyn and Autoimmunity" (Håkan Åström in Wijkström, 1991/B2, p.9). It was a cumbersome and complex merger process where a variety of company cultures were to melt together. It resulted in considerable friction and numerous conflicts, and Erik Danielsson resigned as head of the Procordia Health care area in the fall of 1990.

10.4.3 *Envision goals: Investments in Smoking Cessation and OTC.*

When Nicorette was reclassified as a non-prescription drug in more and more markets, it became an international OTC product to an increasing degree. The non-prescription status substantially increased sales. Nicorette became one of the largest-selling products of Kabi Pharmacia, and it had to be decided what to do with it. It required more marketing and sales investments, but it also constituted a tremendous opportunity to establish a global brand since there was no serious competition yet.

When Nicorette became an OTC product, it was even more apparent that it differed profoundly from ethical, or prescription, products. There were intense internal debates on what products and areas for the company to emphasize in the future: Nicorette and other OTC products, or prescription therapeutical areas: "The views at

Kabi Pharmacia on whether to go for OTC or not were extremely divergent” [Mats Ringesten, Procordia, Director Strategy & Business Development]. The Nicorette unit naturally tried to argue for a greater strategic focus on smoking cessation: ”Jörgen Johnsson fought in an entrepreneurial and forceful way for it” [Jan Ekberg, President Kabi Pharmacia later Pharmacia & Upjohn].

From a corporate point of view, however, the question was whether Nicorette was to be kept or to be sold and if it was kept, what to do with it. Many were negative towards non-prescription products: ”There were many spokesmen for an exclusive focus on prescription products, since these had significantly higher margins” [Mats Ringesten]. Others, particular corporate management, thought that Nicorette could be considered a core product, but they had doubts regarding the expanding OTC area in general. Naturally every pharmaceutical unit wanted to spread its own risks individually and increase its own product portfolio. However, from a corporate point of view, it was not self-evident that an expansion into low margin non-prescription drugs, vitamins, herbal remedies, etc. would benefit the corporation as a whole. It was felt that further expansion and more resources for the Nicorette brand might be a better investment than expanding OTC.

Apart from the lower margins, there were several other factors which indicated that OTC products were not appropriate for Kabi Pharmacia. In particular, they involved a different business logic and it was questionable whether Kabi Pharmacia had the requisite capabilities, or if not, whether they should acquire those capabilities. It was argued that there might be another, better home for the OTC products and also for Nicorette.

In addition, the OTC products were not particularly sophisticated; they were rather ”low-tech” compared to the prescription products: ”These consumer-oriented products were not considered sophisticated enough in the world of pharmaceuticals. They had lower margins, required more marketing efforts, you sold them in different ways, etc. It was an oddity in that world” [Jan Ekberg]

Several other factors indicated that at least Nicorette ought to be sold. Some of them had been discussed earlier in the history of Nicorette. First and foremost was the ethical question of selling and marketing an addictive poison directly to consumers. This was also of concern to the authorities, and the questions were how it would be

regulated and how the market would develop: "There were extensive debates. Where would the market go? The regulators wanted us to stay off the market, not to market to the end users" [Gunnar Casserstedt].

Moreover, there were several other uncertainties involved in the smoking-cessation market. Competitors had started to enter the market and threatened Nicorette's dominating position. It was questionable whether Nicorette would be able to keep its top position against global pharmaceutical companies such as Ciba Geigy with its Nicotinell brand. Several companies were about to enter the market with patch products, Warner Lambert had launched Niconil in Ireland, and there were several new market entries in the US.

Since the distribution rights and product had been licensed to others, Kabi Pharmacia did not have much power over the product. Marketing, branding, distribution etc, were not coordinated on the different markets. Furthermore, the patent on the Nicorette chewing gum was about to expire, competitors were entering the market and the product was already licensed to others.

It was thus obvious that there were several clear motives for divesting Nicorette. It was apparent that some managers within Kabi Pharmacia's ethical product areas were hesitant and reluctant about Nicorette. It was questionable whether the company had enough OTC competencies and, if not, whether it would be wise to build them up given resource restrictions and the existence of other, larger, and more promising prescription pharmaceutical areas.

Some in corporate management at Kabi Pharmacia, in particular the President, Jan Ekberg, thought that Nicorette had become an important product: "Kabi [the pharmaceutical unit] was doubtful, but corporate management and the division [Nicorette] saw the potential" [Mats Ringesten]. Mats Ringesten, Director of Strategy & Business Development at Procordia, headed a range of strategic and environmental studies on the corporate level, and some of them indicated a favorable future for OTC products. These findings contributed in significant ways to obtaining the support of corporate management.

The debates continued, but the final outcome was that Nicorette and the other OTC products would be kept and investments made. Money were to be invested into buying back distribution rights for Nicorette on the international markets, except for

the biggest market, the US. This was of course a partial victory for the Nicorette unit. They were to redesign and coordinate marketing and distribution on the international markets. However, it was not felt to be a major issue in the context of Procordia, Kabi Pharmacia and in relation to other pharmaceutical units: "It was not particularly sophisticated. We felt strongly about this, we believed in it and thought that it was right" [Jan Ekberg].

The other OTC products were also to be kept. However, there was a discussion on whether they were to be expanded and whether local OTC products in other markets should be acquired and more products added, though no particular focus was put on them: "There was no particularly clear view [at the corporate level] of what to do with OTC, how it would grow or in other respects, I doubt that" [Lars Backsell, Managing Director Kabi Pharmacia Self Care]. The main strategic focus at the Procordia corporate level was on "functional food", the idea of integrating and linking the food business of Procordia with the pharmaceutical business: "There was a completely different and more strategic emphasis on that idea" [Lars Backsell].

Kabi Pharmacia acquired the majority of the shares in the Italian pharmaceutical company Pierrel in 1991. Nicorette sales increased as distribution rights were bought back and new products were launched, but more and more competitors entered the market as well. Jan Ekberg became the new CEO and President of the whole Procordia conglomerate in 1992, and Håkan Åström became the new President of Kabi Pharmacia. Even though Nicorette had received some support at the corporate level, it played a modest role in the therapeutical area. Some in the prescription therapeutical areas still thought that Nicorette and OTC had no place in the company or that these should be kept as a cash cow, without any major investments.

One tendency was that competitors had started to divest their OTC portfolios and were handling life-cycle management via licenses, while others focused more exclusively on OTC. Some argued that Kabi Pharmacia should choose the former. It was emphasized that Kabi Pharmacia focused on six strategic therapeutic areas in "...which resources will be concentrated" and "The company gives the highest priority to these areas..." (Procordia, 1992, p.15). Nicorette was not among the six areas. Instead it was classified as an "established" area together with five others.

Procordia acquired 51% of the shares in Farmitalia Carlo Erba (FICE) in 1993, and in that same year Procordia was split into one food and one pharmaceutical group with separate ownership for each.

10.4.4 Implement goals: Consumer Healthcare – Core Strategy

Even if OTC considerations had no role to play in the acquisition of the Italian company FICE, it contained an OTC unit, Carlo Erba. It was decided that Carlo Erba, the Self Care unit and Nicorette should form a single unit, Consumer Pharma: "I came back to Pharmacia when we split Procordia in 1993 and then I formed a consumer health care division" [Jan Ekberg].

Consumer Pharma felt that they were finally recognized as a significant and important part after years of struggling. Many at the company, however, considered it to be less dramatic and a question of where to put resources: "I do not believe Consumer Healthcare [OTC and Nicorette] had to fight in order to stay in the corporation. Maybe they had to fight in order to be a separate unit. They have definitely been fighting to make acquisitions, but they have not been allowed to do that" [Håkan Åström, Group Vice President Pharmacia later Senior Vice President Corporate Strategy and Investor Relations Pharmacia & Upjohn].

Sales of the Consumer Pharma business area were 1.722 MSEK after the integration of Nicorette, Self Care and Carlo Erba (Pharmacia, 1994). Consumer Pharma was one of seven business areas in the "new" Pharmacia. The others were Biopharmaceuticals, Pharmaceuticals Uppsala, Pharmaceuticals Milan, Hospital Care, Diagnostics, a separate area called Biotech and a business development area, Biosensor.

The OTC products and Nicorette had a certain role in Pharmacia's strategy at this time: "Strategy [heading] Pharmacia's objective is also to maintain a leading position in certain segments of the over-the-counter market where the company can develop health care products with strong brand names" (Pharmacia, 1994). The smoking-cessation market was turbulent since several new competitors, especially in the US, had launched smoking-cessation patches and overestimated market demand: "At the same time as the main competitors lost approximately half of their sales,

Nicorette managed to maintain an unchanged level of revenues compared with 1993” (Pharmacia, 1994).

As part of the continued consolidation process, Pharmacia merged with American Upjohn in the fall of 1995. Dr. John Zabriskie became CEO and President and Jan Ekberg Chairman of the Board. Again, OTC was not a factor in the merger, but Upjohn had OTC products. In particular, the company had a market-leading hair-loss treatment product, Rogaine/Regaine, which had obtained OTC status and was the first non-prescription product for hereditary hair loss. A Consumer Healthcare unit was formed, headquartered in Helsingborg, Sweden, with global responsibility for the OTC business.

The merger process did not evolve as expected, some claimed because of culture clashes between the American and European management. A front-page, lead-story headline in the Herald Tribune declared the merger to be a “A Case of Corporate Culture Shock in the Global Arena”: “Indeed, Pharmacia & Upjohn has suffered enough clashes of management culture, style and approach to make a case study of what American Executives should not do when they come to Europe” (International Herald Tribune, April 23, 1997).

Others argued that it had more to do with specific management problems rather than cultural ones. The President and CEO, Dr. John Zabriskie, had to resign, and the company went through a troublesome period. The Pharmacia & Upjohn shares plunged on the stock market. Jan Ekberg agreed that there were frequent conflicts between American and European management cultures, and he stepped in temporarily while a new CEO was recruited: “I must admit there are different traditions” (International Herald Tribune, 970423). The costs of the merger were considerable higher than expected, and during 1996-1997 there were intensive discussion concerning how to organize the company, what areas to keep and focus on and whether to divest any sections.

Nicorette and the OTC products were up for discussion at this time as well, but there were no explicit divestiture plans: “You can divest all the time. It has been there all the time. People have been knocking on the door, but the decision has been to continue and not to sell” [Håkan Åström]. In particular, Consumer Healthcare showed

increased growth and profits during this period: "Today it is one of the most lucrative of all parts, even after the merger with Upjohn" [Mats Ringesten, 1997].

Fred Hassan was recruited as new CEO and President in 1997 and started a turnaround program in order to improve the financial performance, which had deteriorated since the 1995 merger. A major ingredient in the turnaround was to reduce the number of manufacturing plants significantly and to decrease the number of research and development sites. A new corporate management team was formed, the company was reorganized and headquarters moved from the location in London during 1995-1996 to New Jersey in the US.

The different business areas in 1997 were Rx Pharma (prescription pharmaceuticals), Consumer Healthcare, Animal Health, Diagnostics, Pharmaceutical Commercial Services and Nutrition. It was apparent that Consumer Healthcare might play a more prominent role. Jörgen Johnsson, President of Consumer Healthcare, had become a member of corporate management in 1997.

The organizational, managerial and strategic changes continued during 1998. Jan Ekberg resigned from the Board and the company in 1998. Some of the businesses were divested during 1997 and 1998; Nutrition was sold and analytical instruments and separation technology were placed in a separate shared company or joint venture. The focus was increasingly on prescription pharmaceuticals and Consumer Healthcare. It was acknowledged that life-cycle management, the transfer of prescription drugs to OTC products as patents expired, was an important strategic ingredient.

Even if Consumer Healthcare played a more important role, it was not self-evident to everyone, especially not within prescription pharmaceuticals: "Those [in prescription pharmaceuticals] could not care less about OTC...They are two different animals in terms of operations, but not in terms of core strategy perspective." [Gunnar Casserstedt, Vice President, Portfolio Management]. Hence, not everyone was sure that corporate management was convinced: "I do still not know if they are convinced. I am not totally sure that everyone is convinced that it is important" [Jan Ekberg].

However, when Håkan Åström, Senior Vice President, Corporate Strategy and Investor Relations, sketched the current business activities in mid-1998, it was clear that OTC was a core part of pharmaceuticals - the other core part was Rx, or

prescription, products. The corporate management now shared Consumer Healthcare's view on the significant role of OTC in the pharmaceutical industry and within Pharmacia & Upjohn: "When we analyze environmental trends, we believe that consumers will receive a more prominent role in the future. That is why it is important for any pharmaceutical to be transferred to OTC over time" [Håkan Åström]. Consumer Healthcare, smoking cessation and other OTC product were now a core part of Pharmacia & Upjohn's strategy, and sales for Nicorette continued to rise: "We must focus our resources on the core business in order to grow. We need to think of the prescription and over-the-counter segments as part of a whole in order to better manage our products through their entire life cycle. If we do this well, we can maximize the value of all our products" (Håkan Åström, Senior Vice President, Strategy and Investor Relations, Focus – The Strategic Direction Issue, 1998).

10.5 The Adaptive Motor at AGA

10.5.1 AGA – A Slowly Dissolving Conglomerate

Although the industrial gas industry is a rather conservative business, AGA has been an exception in one respect: it had a conglomerate structure. AGA expanded into a wide variety of businesses early on. Industrial gases had been an important business area, but new ventures had mostly been in other businesses. Even after recentering on industrial gases in the 1970's, when most other businesses were divested, new undertakings and investments were made in non-gas businesses. Frigoscandia, the second largest commercial storage company in Europe, was acquired in 1978. Another company, Uddeholm, an electric power and steel company, was acquired in the mid-1980s. There was no major expansion into new geographical markets in the gas business except for an entry by acquisition into the US in the late 1970's.²²⁴

With the increasing focus on gas, however, development of existing markets in Europe had started. The growth mode followed AGA's traditional one of acquisitions, primarily in Germany and France. corporate management, consisting essentially of President Marcus Storch, Regional manager for Europe Anders Rungård and Executive Chairman Sven Ågrup, concentrated on these issues. Both Rungård and

Storch had been with the company for a long time, Rungård for over 20 years in various positions and Storch as a member of the Board since 1979 and President since 1981. Sven Ågrup had been on the Board of AGA for more than 20 years.

They focused on the integration of the newly acquired Western European units and the expansion of the cold-storage business in the late 1980's and early 1990's, during the changes in Eastern Europe. The Regional manager for Europe, Anders Rungård, concentrated on merging and rationalizing acquired units and expanding in southern Europe: "It [the fall of the Iron Curtain] came a little too early for us, because I was busy trying to achieve profitability in Europe and wanted to put resources there when this appeared" [Anders Rungård, Regional Managing Director Europe]. In addition, the food-freezing and cold-storage business, which accounted for 30% of sales, made some major acquisitions in France and Germany in the early 1990's. This business also acquired a Swedish potato processing machinery company. The energy business was merged with another energy company. President Marcus Storch defended AGA's presence in the three diverse businesses: "Long-term Investment [heading], Our three areas of business may seem to be completely different, but they have many structural similarities" (Presidents Review, AGA, 1989).

AGA's corporate management was unprepared at the time of the fall of the Berlin wall and the opening of a market with more than 300 million inhabitants, including Russia. A while after the fall of the wall, Rungård asked Lars Källsäter, former head of the Swedish subsidiary, to look into the Eastern European changes along with his other duties. The Board and its Executive Chairman, Sven Ågrup, were not directly involved initially. Eastern Europe did not become a Board issue for quite some time, since the initial investments there were small.

Corporate management, together with the Board, continued the work of expanding and restructuring Western European gas activities and expanding the cold-storage business. However, they also acknowledged the opportunity in Eastern Europe even if they did not expect any rapid changes in the industrial gas industries: "Eastern Europe, too, can become an interesting market" (President's Review, AGA, 1990).

²²⁴ The US company Burdax Inc. was acquired 1978.

Later, in the mid 1990's, AGA started a process of leaving its non-gas businesses altogether, in order to focus solely on industrial gases. The food-storage and freezing-equipment operations were transferred to the shareholders, and the energy business was sold. AGA, finally, was purely an industrial gas company by 1996. Meanwhile two managers, together with local recruits and subsidiaries, the "Eastern Europe team" were working intensively to expand the gas business into twelve new markets in Eastern Europe, increasing AGA's national market coverage by over 60%.

10.5.2 Dissatisfaction: Changed Strategy and Changes in Eastern Europe

There were no studies done concerning the evolving liberalisation of the Eastern European markets in the late 1980's, before the wall had come down. AGA's corporate management had no intention whatsoever to enter Eastern Europe even if they tolerated the activities of the Austrian subsidiary in Hungary: "We did not do anything there, we did not set foot in those markets" [Anders Rungård]. As early as 1988, there was an opportunity for AGA to enter a partnership with a gas company in Hungary. However, they turned the offer down. It was the firm belief of the Board that AGA should only have a majority ownerships. Even after the developments of 1989, there was no excess of enthusiasm for Eastern Europe.

Corporate management's rather moderate initial interest in Eastern Europe was due to the uncertainty surrounding the market developments and AGA's other undertakings. Hesitancy about how these markets would develop were considerable. AGA's corporate management was as confused over the Eastern European developments as many other actors in their industry, and in other industries. Moreover, the process of consolidation and concentration on gas at AGA was going on, as were the expansion in the cold-storage business and developments in the energy business. The first initiatives to expand into Eastern Europe were taken by local subsidiaries close to the markets. An offer to enter a joint venture with a steel mill in Hungary was turned down by corporate management. Later a Hungarian manager at the Austrian subsidiary set up a representative office in Budapest late in 1989. In East Germany the West German subsidiary started to explore the market.

AGA was not prepared for the opening up of the Eastern European markets and did not develop any specific targets or strategies after it was a fact. Lars Källsäter was assigned to study the issue, but there was no change in plans. Corporate management thought that Eastern Europe might become an interesting market, but there was no rush; "...the development in Eastern Europe may have an important influence in the future." (President's Review, AGA, 1989). The ambition was to protect the home region, and that was primarily the responsibility of local subsidiaries. Lars Källsäter's function was initially to keep track of developments and provide support. Thus, the team of Lars Källsäter and, later, Lars Timner did not have a formal project of leading AGA into Eastern Europe; rather, they were to provide a kind of support service. Later their work developed into a project, or team, together with local subsidiaries "...it became some sort of project, but subsidiaries were involved" [Anders Rungård].

In Hungary local managers were active together with Lars Källsäter. AGA was offered an opportunity to buy part of the Hungarian gas monopoly. The Board, and Chairman Sven Ågrup in particular, were unwilling to accept and turned it down. Sven Ågrup was especially skeptical concerning acquisitions in Eastern Europe that did not involve majority ownership. He and corporate management were afraid of control problems if AGA did not achieve a majority of the shares. Furthermore, if the company developed well and wanted to increase its share, they feared that it would not be possible: "Our position was that if we should enter Eastern Europe we should do it through green-fields" [Sven Ågrup, Executive Chairman, Chairman of the Board].

Later there was a growing belief that AGA probably should protect its Scandinavian home market from competitors, which might establish themselves in nearby Eastern European markets. The general view was to guard the region close to Sweden, even though the opening of Eastern Europe came at an inconvenient time. Initially there were no substantial investments made in Eastern Europe, and senior management did not believe they had to be involved in the decisions: "We planned with the ambition to protect our flank. The planning ended there and after that we have been playing it as it comes; gradually, as issues have appeared, we have taken decisions question by question" [Anders Rungård].

The fall of the wall did not lead to any dramatic strategic changes. The team, including locals, made the decisions, including most of the investment decisions. When investments became higher, around a few million SEK, the Regional Manager for Europe, Anders Rungård, was involved. Since there were no major investments, others in corporate management or Board members did not have to be part of the discussions and decisions.

10.5.3 *Interact: Minor investments in Eastern Europe*

Since the German competitors had moved so quickly, there was nothing left for AGA to buy in Czechoslovakia even if it had wanted to make acquisitions there. Subsequently there was an ambition among corporate management to enter Eastern Europe, but it had to be at a reasonable level of risk: "There was a competition for the companies [gas monopolies], everyone was out there looking. There was nothing that we wanted...the conditions were not [favorable]...during the whole Soviet era the industry structure was devastated...there was nothing we wanted" [Sven Ågrup].

Although AGA's expansion strategy on other markets was primarily through acquisitions, there was particular resistance towards the acquisition mode of entry in Eastern Europe: "Our competitors have moved in and acquired the big established companies, with employees and responsibility for 3-4,000 people, when you perhaps only need 300, and they paid very high prices for it; we did not believe that it was the right method" [Sven Ågrup].

Corporate management also calculated that the Eastern European markets would mainly consist of cylinder gas distribution, around 80%, for the first 5-10 years. This is a distribution form in which AGA had some advantages. However, it did not turn out that cylinders dominated the markets. In Hungary, for example, other distribution forms became relevant much earlier than corporate management anticipated. Management gave priority to small green-field investments and went into joint ventures instead of making acquisitions.

In Czechoslovakia a partnership was reached with the largest steel mill. However, this turned out to be risky as well. During the transition period this steel group ran into trouble and was close to bankruptcy for a while. Since AGA had

invested a fair amount of money, they were of course concerned and the Executive Chairman of the Board, Sven Ågrup, had to be informed and directly involved. As it turned out, Vitkovice survived and so did AGA's alliance.

Corporate management essentially all agreed on the more conservative method of entry into Eastern Europe. A more aggressive policy did not seem possible: "In addition we did not have the economic stability...we did not have enough money to invest...I do not believe I would have been able to get it accepted...afterwards when one thinks about it... at that time we thought we were sticking to the right alternative...I can not say whether there was some kind of rationalization in this, that it was not possible to sell any other alternative" [Anders Rungård].

The Eastern European team, on the contrary, wanted to move faster, make more substantial investments and acquire industrial gas monopolies. This was in opposition to the corporate management standpoint. Corporate management believed that the plans were to risky. Corporate management did not have to be too involved and in particular not the Executive Chairman and the Board. They did not become involved until later: "Most of it never reached the Board" [Lars Timner]. The Board did not discuss any plans for the Eastern Europe entry in general, but made decisions in relation to specific investments above a certain level, around 20-25M SEK (\$2.5-3M).

Corporate management and the Board did not do any extensive exploration of Eastern Europe on their own: "No, no we did not do that [visit EE], but we discussed it, it was on the agenda" [Sven Ågrup]. It was the team together with local recruits which investigated the Eastern European markets: "I suppose I was out there to a certain degree, but above all it was Timner and Källsäter" [Anders Rungård]. There were supposed to be contacts between headquarters and the new subsidiaries. The new subsidiaries were to be supported by headquarter staff and by "godparent companies" in nearby Western markets. However, initially the relationship with headquarters functioned poorly, in Hungary for example: "But there [HQ-Hungary subsidiary relationship] was nothing preventive, it was rather in terms of emergency work" (Almquist and Ivarsson, 1996, p.28).²²⁵ In Poland there were similar problems.

²²⁵ Almquist and Ivarsson (1996) evaluate the relation to headquarters and "godparent" companies in three of AGA's subsidiaries during the entry into Eastern Europe.

10.5.4 *Envision Goals: A Plan –Protecting the Home Region*

After the initial turbulence in Eastern Europe in the beginning of the 1990's, a common view developed among corporate management regarding Eastern Europe: to protect the Baltic region. The Regional Manager for Europe, Rungård, had an idea of creating a "Baltic landscape" where AGA would be established around the Baltic sea. Maps were sketched based on the Swedish 18th century king Karl XII's conquests: "There were beautiful maps...similar to the ones from the time of Poltava."²²⁶ It was a general policy to enter Eastern Europe, but it did not include any specifics, "...we went back to Karl XII's map, this domain should be our home market...it developed naturally...it was natural to guard the Baltic area" [Anders Rungård]. AGA's ambition was quite cautious: "Our investments are made at a reasonable level of risk and in proportion to the market opportunities." (President's Review, AGA, 1992). The Eastern European team did not feel much support and did not experience much in terms of policy or strategy. "If there were any strategic ambitions, they were well hidden!" [Lars Timner]. It was also recognized by corporate management that it was an extremely extensive ambition, "...it was a very broad strategy and it allowed many things" [Anders Rungård].

The entry into northern Poland followed the policy of protecting the Baltic region, but it is less clear how Hungary and Czechoslovakia fitted in: "It was not obvious...because it did not really have anything to do with the Baltic landscape strategy," and "In Czechoslovakia the reasoning might have been that it was a country with a long industrial tradition..." [Anders Rungård]. Investments in southern Poland were not accepted, even though the Eastern Europe team had wished so, "...it did not benefit this [home region] strategy" [Anders Rungård]. Investments in northern Poland were accepted, but AGA was not so successful in the acquisition process: "We bet on entering Poland to buy, but it did not really turn out that way, everyone set about to get it" [Anders Rungård]. "AGA made a mistake and instead of acquiring three companies [in Poland] they only succeeded in going through with one."

²²⁶ The Swedish king Karl XII managed to conquer most of Northern Europe and set out to continue towards Moscow. However, the Swedish army fought a crucial battle against tsar Peter and the Russian army around the Ukrainian town Poltava in 1709 and was defeated.

(Almquist and Ivarsson, 1996, p.31). Subsequently some investments were made in Poland and a subsidiary was established.

There was friction not only with the Eastern European team, but with subsidiaries as well: "In Poland, as in Hungary, many opportunities were spoiled since there was not full confidence in the Managing Director taking initiatives. Headquarters wanted to give their approval before decisions were made and this resulted in a time lag. Hence, other companies got there earlier, for example when there were opportunities to buy smaller companies in the country." (Almquist and Ivarsson, 1996, p.39). The Board was informed about the bids in northern Poland; they involved around \$15M: "Only the bigger issues came up for decision by the Board" [Anders Rungård].

The Board's criteria for investment decisions involved general plans such as goals, market plans, costs, payback and organizational developments, but the data was not as professional as in other markets: "There were more guesses in the material since there was not much data available in Eastern Europe to go by" [Anders Rungård]. Corporate management based their decisions on essentially the same material. The Region Europe Manager, Anders Rungård, had some broader contacts "...checked with colleagues in other companies out there, checked with the Foreign Department reports and the embassies, general economic conditions, but I was not out there" [Anders Rungård]. The team gathered all information close to the markets "...they were out there gathering material and doing underground work" [Anders Rungård].

The entry into the Baltic states fit the home-region protection concept and only involved minor, with no competition for acquisitions. Here the team was quite free to do business. In contrast, the Kaliningrad investment, although quite small, \$2.5M, was resisted by the Executive Chairman. He and the Board were concerned about potential obligations towards the Russian state and military if AGA would buy the company. Nevertheless, after long discussions it was accepted a couple of years after the team's original contacts.

Corporate management had a preference for green-field investment over acquisition, although the latter was the normal mode of entry in other markets: "We came to the conclusion that we could buy market shares, but we had to pay a pretty

high price for it. We thought it was better and easier for us to build capacity” [Sven Ågrup]. “It was better to build it ourselves than to buy old junk” [Anders Rungård].

In general the Executive Chairman tried to slow down the process of entry into Eastern Europe: “If I had done it myself I would have done it somewhat more selectively and not quite that extensively.” [Sven Ågrup]. Despite the resistance the Eastern European team felt from corporate management, they continued their explorations. Even though Moscow did not seem to fit the “home-region concept” the team managed to sell a deal to corporate management, which in turn got the Board to accept it. It was such a good offer that the Board could not resist it; for approximately \$1M AGA received 35% of the market in the Moscow area. The team did not feel any sense of direction, “...we needed a vision” [Lars Timner], but continued to propose the investment opportunities they came across. And some of them were accepted others were not, “...sometimes we thought it went too far and sometimes we went ahead” [Anders Rungård].

10.5.5 Implement Goals: Full Entry Into Eastern Europe

Eastern European countries started to show some political and economical stability in the mid-1990's, after the first turbulent years. The subsidiaries of AGA had become established and were growing rapidly. Because of this, larger investments were required. Hence, more investment decisions reached the Board. The Board only decided on investment proposals above a certain level (approximately 25M SEK, \$3M),²²⁷ and by this time more investments were large enough to reach the Board: “The real decisions by the Board did not come until 1995-96” [Lars Timner]. It turned out that the Board in general was positive towards these investments and also, after the good Moscow deal, favorable to new investments in Russia, around Moscow and St. Petersburg.

The need for more investments followed from the initial entries made by the team and AGA: “It is difficult to interrupt something which you have started...if you participate in a 100 meter race you have to finish it” [Anders Rungård]. Hence, higher

²²⁷ These figures apply to the Hungarian subsidiary AGA Gáz (Calming and Jakabffy, 1993, p. 38). Figures for other subsidiaries might differ.

investments had to be accepted by senior management and the Board once AGA had entered in the first place.

Another issue contributed to the Board's and later corporate management's more positive attitude towards investments in Eastern Europe. In the mid-1990s AGA had sold the last non-gas businesses, thus generating cash and a strong liquidity: "There were some on the Board who said that money ought to be in the business and not in the bank" [Sven Ågrup]. The team continued to identify investment objects. Corporate management tried to slow down the process even though they too recognized that there was capital available. However, they were concerned about the economical and political risks of a more aggressive approach. They also felt that there was a lack of management resources, "...[you] really have to comprehend what management resources you have, what risks you take" [Sven Ågrup]. Nevertheless, there was a growing understanding between the team and the Board and corporate management.

Results also improved for AGA in Eastern Europe in the mid-1990's, even if the price level was still low: "Operations showing considerably improved results, although from a low level" (President's Review, AGA, 1995). And subsequently corporate management became more open to investments in general and acquisitions in particular in Eastern Europe.

AGA was the first international competitor in Romania and set up a joint venture there. In addition, the biggest industrial gas company in the Ukraine was acquired. And investments continued in Russia. These developments were accompanied by some changes in corporate management. Another manager became responsible for Northern Europe and later a new President of AGA was appointed, the former Managing Director in Germany, Lennart Selander. In general there were larger investments both in the newly established Eastern European subsidiaries and in altogether new ones, "...there was much more money later" [Anders Rungård].

AGA kept on investing in Eastern Europe since volumes were increasing and more substantial investments were needed. Market penetration continued as well. Most Eastern European countries had been entered by 1997: "Despite everything we have obtained acceptance for quite a few investments. We have ten or eleven subsidiaries in Eastern Europe, they have been generous after all" [Lars Timner].

Sales increases were considerable in Eastern Europe in the late 1990's except for a downturn in Russia and the Ukraine because of the Russian crisis in 1998. Sales increased by over 20% per year, and prices were steadily rising in the Eastern European markets. By 1998, AGA was present in twelve markets in Eastern Europe.

10.6 Adaptive Strategy Motor Characteristics

The descriptions of the adaptive strategy motors provided an illustration of how the strategies were identified, accepted, enacted and finally implemented by the companies in the multiple retrospective study. The adaptive motors included a purposeful and adaptive process in which they interacted with the creative ones and finally envisioned an end state. It essentially involved a *teleological process* where the different phases of *dissatisfaction, interaction, goal envisioning and implementation* could be identified. The objective was not specific at the outset, but was progressively enacted in an adaptive process (see Figure 10.1). The adaptive strategy motors provide a description of how the corporate strategies were changed; thus, they involve a *constructive mode of change*.

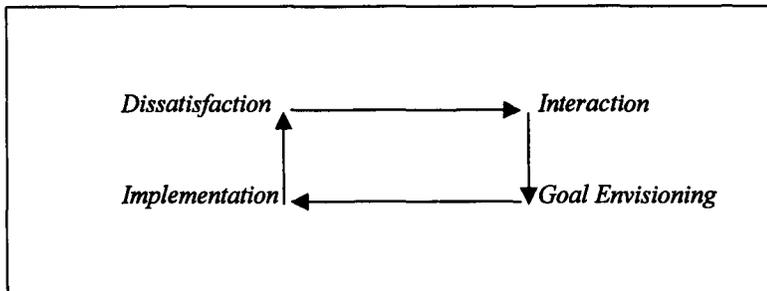


Figure 10.1: The teleological character of the adaptive motor.

As with the creative motors, it is important to note that the strategy processes were less linear and included more of a discontinuous sequence as compared to an ordered-stage, step-by-step *ideal* process. The stages also had different lengths and were integrated differently with each other in every case. In addition, the adaptive strategy motors displayed very slow development and considerable inertia compared to the

ideal type. The adaptive motors in the centre of the MNCs tended to reject and ignore what was happening in the creative strategy motors for a long time.

Many strategy models in the literature on strategy formulation and planning have a teleological character, but they tend to involve more rational features, and the goals are entirely and deliberately set within the teleological process. For example, descriptions and analyses of strategic change in traditional strategic planning often follow the order of goal formulation, implementation, evaluation and reconsideration of goals and strategies (e.g. Schendel and Hofer, 1979; Chakravarthy and Lorange, 1991).

The major difference between the adaptive motors observed and traditional models of strategic planning processes is that strategy creation emanated from, and was propelled by, the creative strategy motors and was later envisioned and enacted by the adaptive motors. Hence, it is important to observe that the adaptive strategy motors alone are not sufficient to describe the whole strategy-making process, since they do *not* cover the discovery and creation of the strategies. The strategies emerged with a life-cycle character within the creative motors and presented themselves in terms of more or less well-defined strategic visions, positions and decisions for the adaptive motors.

While the adaptive motors did not include the history and creation of strategies, they predominated more and more over the creative motors in the later stages of the life-cycle process (harvest and termination stages), when there was confrontation, then interaction with and finally recognition within the adaptive motors (interaction and goal envisioning stages). In a sense the creative strategy motors could be described as involving the formulation stage in strategic planning terms, while the adaptive motors correspond more to a formation and implementation stage. The creative motors generated certain ideas and goals at the outset that were subsequently implemented as corporate strategic change in the adaptive motors. In brief, the adaptive strategy motors covered the implementation part of the strategy formulation – implementation dichotomy, and the creative motors, the formulation part.

This is of course quite contradictory to the traditional view, in which the situation is basically reversed; central corporate units make the plans, which are implemented by peripheral organizational units. A schematic sketch of how the

motors relate to each other and coincide, and a comparison with a classical strategic planning and management process model (e.g. Schendel and Hofer, 1979), is provided in Figure 10.2.

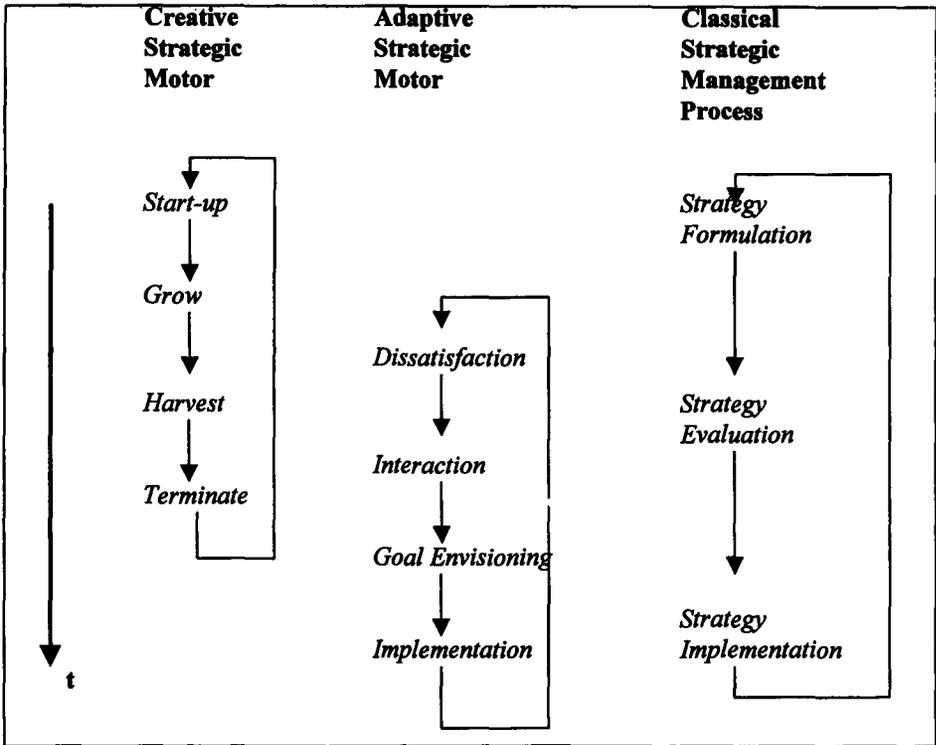


Figure 10.2: The relationship between the creative and adaptive strategy motors compared with a classical strategic planning and management process.

The characterization of the strategy motors in terms of ideal types of change processes (life cycle vs. teleological) specifically illustrates the differences between the two motors and makes comparisons with other strategic and organizational change models easier. It is based on van de Ven and Poole's (1995) four basic theories and ideal types for explaining processes of change in organizations: *life cycle*, *teleology*, *dialectics* and *evolution* (van de Ven and Poole, 1995).²²⁸ As discussed above in

²²⁸ A primary objective of Van de Ven and Poole (1995, p.532) in outlining the four ideal-types of organizational development and change processes was to offer "a parsimonious explanation of a wide variety of organizational development and change theories". Furthermore: "In an adequate theory, each

relation to the analysis of the creative motor, it is important, however, to emphasize that the motors did not include the ideal types in their most pure form.²²⁹ In general theories tend to involve combinations and interplay between two or more ideal types. The analysis in this study shows that the creative motor is nested in the adaptive motor, since the latter operates on a higher organizational level. In addition, there is conflict and interplay between the two motors; this phenomenon may be termed a *friction motor* of a *dialectic* process type. It is described and analyzed later in this chapter.

In accordance with the analysis and characteristics of the creative motors, a range of other strategy process features can be identified in the adaptive motor, besides the teleological properties. First, *the adaptive motors were positioned in the centre of the companies*, in the spheres of corporate and senior management and headquarters. Second, it has been noted earlier that the two motors seemed to differ in terms of how they provided information for the strategy and developed it, and how they informed themselves about its development. In particular, it can be observed that *the adaptive motors differ from the creative motors in their learning dynamics in terms of integrating and combining knowledge. Knowledge assimilation in the adaptive motors was confined more to the existing organization and industry spheres and to historic strategies.*

A third important feature of the adaptive motors was that the knowledge-assimilation practices were based on *exploitation and relied more on deductive reasoning compared to the creative motors*. The processes included inferences, decisions based on prior experiences, formal inquiring, intelligence gathering, formal models and algorithms, etc. Fourth, there seemed to be firmer, more established patterns and structures of strategy interpretation compared to the creative motors. *The managerial frameworks, or the way in which the actors involved made sense of the strategic puzzles, appeared to be more closely tied to the domain of the prevailing strategy in terms of industry, resource and market settings and appeared to be more well-defined than in the creative motors.*

ideal-type motor should be represented in its full-fledged form, and the relationships among motors should be fully specified."

²²⁹ Van de Ven and Poole (1995) acknowledge the fact that most theories of organizational change and development rarely include the ideal types in their complete form.

10.7 Knowledge Assimilation Practices in the Adaptive Motors

It was highlighted earlier that the knowledge-assimilation practices as such differed in the two motors. Both deduction of optimal strategies based on formal strategic approaches and more inductive approximations were involved in the development of strategy. In the adaptive motors it was primarily a process of deducing optimal strategies, while the creative ones involved a more inductive development. Besides differences regarding the deductive-inductive mix, the pattern of knowledge-assimilation practices varied between the motors. Four different types of processes and learning were identified and discussed in the previous chapter: exploration vs. exploitation and procedural vs. declarative learning.

Different practices were common in the two motors. While the creative motors included more creative responses, other practices, primarily in the adaptive motors, focused on learning formal facts about the strategic puzzle. Regarding the exploitation/exploration trade-off, the adaptive motors involved more exploitation within the bounds of historic and existing strategies. Hence, the adaptive motors were more likely to improve exploitation than exploration: "...adaptive processes characteristically improve exploitation more rapidly than exploration" (March, 1991, p.73). When it comes to declarative learning (learning by observing or explicit learning of facts) vs. procedural learning (learning by doing or learning through experience) both motors involved both types, but they appeared to have a different character in the two motors.

The adaptive motors were dominated by exploitation based on prior experience with the prevailing strategy and by declarative learning based on formal reports and documents concerning the strategic puzzle. At Ericsson, for example, corporate management and senior management in the Public Telecommunications Division informed themselves about developments in the mobile telephony area more by means of reports and formal forecasts. When experience-based learning was used, it related to historic and traditional strategies and did not provide much information for the mobile telephony strategy. Rather, this kind of knowledge was of primary use in developing the prevailing, fixed telephony, strategies.

At AGA the adaptive motor was driven by prior experience with internationalization in the West, but this experience seemed less suitable for Eastern Europe, where the company's entry was of a completely different character. The adaptive motor in AGA also involved more declarative learning in the form of intelligence reports and official government documents; however, these kinds of knowledge sources were few in number and notoriously unreliable.

The character of knowledge assimilation in the adaptive motors of Pharmacia & Upjohn and Couplet was similar; formal industry reports and documents dominated over more informal means and action and market-oriented learning. The experience that was drawn on related primarily to prior strategies, focused on prescription pharmaceutical products and trailer coupling mechanical systems, respectively; in neither case was it of specific use or relevance for the strategic puzzles in question.

In summary, the adaptive motors were based more on prior and historic strategies and exploitation of prevailing resource and market positions compared to the creative ones, which relied on exploration-oriented learning dynamics. Both motors involved declarative as well as procedural learning, but they seemed to be of a different kind in each. The adaptive motors included declarative knowledge of a more formal and routine character, whereas in the creative ones the type of knowledge was more informal and *ad hoc*. Procedural learning in the adaptive motors was based on industry experience and routines, while it included more exploratory experimentation in the creative motors. An overview of the respective types of knowledge and learning for the adaptive and creative strategy motors, and some examples from the two studies (single in-depth and multiple retrospective), are provided below in Table 10.2.

	Creative motor		Adaptive motor	
	<i>Exploration:</i> investigating and developing strategic puzzle.		<i>Exploitation:</i> cultivating prevailing strategy & observing strategic puzzle.	
Multiple retrospective study	<i>Declarative learning</i> (informal contacts and encounters)	<i>Procedural learning</i> (technology and market experiments)	<i>Declarative learning</i> (formal reports and documents)	<i>Procedural learning</i> (industry experience and routines)
Ericsson	Ad hoc recruitment of American cellular technology expert.	Trying to put together a mobile "system" for Saudi Tel.	Mobile telephony forecast reports.	Market estimates based on experience in fixed telephony.
Pharmacia & Upjohn	Noticing food industry marketing practices & employing from that industry.	Trying to market smoking-cessation products directly to end consumers	Reports on OTC product growth.	Profit margins analogies based on experience with prescription pharmaceuticals
AGA	Assimilating and buying local distribut. and gas technology knowledge and recruiting locally.	Approaching and working with former gas monopolies and individual locals.	Country reports (international agencies).	Market development proxies based on Western market developments.
Single in-depth study	<i>Declarative learning</i>	<i>Procedural learning</i>	<i>Declarative learning</i>	<i>Procedural learning</i>
Couplet	Assimilating oil, pump and other distant technologies.	Trying to develop a smaller "Mini coupling".	Truck reports on electro-hydraulic system sales statistics.	Technology development and cost estimates based on mechanical systems logics and technologies.

Table 10.2: Examples of different learning types in adaptive strategy motors compared with creative motors.

10.8 Collective Cognitive Structures in the Motors

So far it has been established that the two motors had distinct process characteristics, different organizational and industrial locations, and a tendency to use dissimilar knowledge-assimilation practices. The knowledge-assimilation practices appeared to be closely related to, and partly grounded in, various managerial frameworks. Managerial frameworks or collective cognitive structures were shortly discussed in Chapter Six. They provide an understanding and interpretation of acquired knowledge within these cognitive borders. Furthermore, they direct attention and perception towards certain parts of the environment. They constitute the interpretation pattern and "theories of action" (Hedberg, 1981) which an organization contains.

In order to understand the judgments and decisions of individuals and groups of individuals, it is necessary - in the case of the individual - to comprehend "...how that person conceptualizes the world and the meaning he or she gives to information" (Hogarth, 1980, p.7). As for groups, a collective cognitive structure refers to a common body of beliefs and values in an entity or organization. Behavioural theorists (Dretske, 1992; Hogarth, 1980) emphasize that the same information is interpreted differently in different environments or models of the world. Essentially the same information can be seen and understood in diverse ways within different cognitive structures.

Although not examined in detail in terms of surveys or individual cognitive maps, this seemed to be the case in the two motors when different views and interpretations of the strategic issues and their developments were compared. The adaptive motors appeared to view and interpret the development of strategy in terms of the prior successful strategies and traditional industry, resource, product and market domains. The managerial frameworks in the creative motors, on the other hand, seemed to be directed outside traditional industry, product, resource and market areas and to be more focused on the puzzle and new strategy paths. The motors faced essentially the same strategic puzzles, but their collective cognitive structures and interpretation patterns towards them seemed to differ. In other words, diversity of managerial cognition seemed to be present and significant in the processes of strategy creation.

The importance of cognitive frameworks and structures has been extensively discussed in strategic management (e.g. Finkelstein and Hambrick, 1996; Hodgkinson and Johnson, 1994; Johnson, 1987, 1988; Porac et al., 1989; Smircich and Stubbart, 1985; Stubbart, 1989; Stein, 1993), and there is a separate "cognitive school" within the field of strategic management (Mintzberg et al., 1998). It has even been argued that strategy is altogether retrospective in cognitive terms: "...execution *is* analysis and implementation *is* formulation" (Weick, 1987, p.230). The observations in the current study, however, point towards a more interdependent and integrative strategy process where strategic action and implementation is *one* of the mechanisms for informing and forming strategy (i.e. via procedural learning), together with other mechanisms (i.e. declarative learning).

The notions of consensus on a purpose and mission and of a core set of values and beliefs in organizations are referred to throughout the history of organizational theory (Barnard, 1938; Cyert and March, 1963; Thompson, 1967). The process of framing issues and problems and searching for, selecting and applying certain solution is illustrated in the behavioral theory of the firm. Organizational cognitive structures have been described in economics, organizational theory and strategic management. Different labels have been used and discussed, such as cognitive maps (Axelrod, 1976), belief structures (Selten, 1967) and frames (Bateson, 1972; Minsky, 1975). It is recognized that the concepts take on somewhat different meanings and that lumping them together does not do them full justice. However, the primary aim here is to show that it is commonly recognized in social sciences that not only do individuals have cognitive structures, but groups share cognitive structures as well.

In research on strategic management, a range of related concepts have been used. Collective cognitive structures have been described and discussed as decision makers' frame of reference (Hambrick, 1981), cognitive schema (Huff, 1983), interpretative system (Daft and Weick, 1984), dominant logic (Prahalad and Bettis, 1986), heuristic frames (Winter, 1987), paradigm (Johnson, 1988), industry recipe (Grinyer and Spender, 1979; Spender, 1989), knowledge structure (Lyles and Schwenk, 1992), managerial frames (Hamel and Prahalad, 1993) and mental models (Markides, 1997).²³⁰ Collective cognitive structures, cognitive maps or managerial frameworks of

²³⁰ Cognitive structures of various kinds are often discussed in relation to organizational inertia and

different kinds have been studied on the organizational level (e.g. Johnson, 1987, 1992) as well as on the industry level (Hambrick, 1982; Porac et al., 1989; Spender, 1989). There are no common definitions available, and the different concepts take on slightly different meanings, referring to various industrial and organizational levels.²¹ It must be emphasized, however, that the recognition of organizational and industry-level cognitive structures is not without controversy, as discussed in Chapter Six (e.g. Simon, 1991; Hodgkinson and Johnson, 1994).

The observations in this study confirm the importance of managerial cognition and collective cognitive structures in strategy-making, but they also indicates that collective cognitive structures can differ within the same organization (Hodgkinson and Johnson, 1994). The primary focus in this study is not on collective cognitive structures as such, but rather on how they develop and how they are formed. It appears as if the learning dynamics and knowledge-assimilation practices outlined in the prior chapter and earlier in this chapter might play a role in their formation.

The process of making sense, or *sensemaking* (Weick, 1995), of the strategic puzzle seemed to differ in the two strategy motors. For Weick (1995, p. 14) "sensemaking" means "to construct, filter, frame and create factivity" (Turner, 1987, cited in Weick 1995). It is reality as an "...ongoing accomplishment that takes form when people make retrospective sense of the situations in which they find themselves and their creations" (Weick, 1995, p.13). Sensemaking can be seen as the development and coordination of individual mental frameworks via learning dynamics in the two strategy motors. The sensemaking processes in the adaptive motors appeared to have a more *deductive* character based on the historic and prevailing strategies. In contrast they seemed to have a more *inductive* character in the creative motors, incrementally forming a view of the strategic puzzles.

resistance to change in MNCs (e.g. Bartlett and Ghoshal, 1989; Birkinshaw and Ridderstråle, 1999) and as determinant for organizational processes, for example innovation processes (e.g. Ridderstråle, 1997).

²¹ Collective cognition is often discussed in terms of organizational culture (Smircich, 1983). Organizational culture includes cognitive properties in Pettigrew's (1985a) investigation of strategy-making, and Johnson (1987, 1992) stresses the intimate connection between "taken for granted assumptions" and organizational culture. It is also worth noting that RBV research has started to examine the role of organizational culture and climate in strategic management (Barney, 1986b, Hansen and Wernerfelt, 1989).

The learning dynamics and knowledge-assimilation practices appeared to be closely related to the process of making sense or sensemaking (Weick, 1995) of the strategic puzzle. In brief, information action (knowledge assimilation), authoring (sensemaking) and use (strategic action) were interwoven. Once again, however, it needs to be stressed that collective cognitive structures and sensemaking have not been empirically investigated in detail in terms of mental maps or cognitive-based interview procedures. In comparison with the conclusions regarding the two motors and involving learning dynamics these observations are more tentative.

In summary, the collective cognitive structures in the adaptive motors appeared to be more structured, and to be directed towards historic and prevailing strategies. The creative collective cognitive structures, in contrast, were looser and aimed more outside prevailing strategies, industries and resources. Their respective cognitive emphasis is described in Table 10.3, which also provides a comparison with the single in-depth study.

<i>Multiple retrospective study</i>	<i>Adaptive motors</i>	<i>Creative motors</i>
Ericsson		
<i>Products</i>	Telecommunication equipment, wire-based.	Any radio/mobile telecommunication equipment, wireless.
<i>Customers/Markets</i>	Government-influenced telecommunication operators, specific geographic markets	Any mobile-telecommunication operators, any geographic area
<i>Resources</i>	Transmission technology, switching technology	Cellular technology, radio technology, switching technology, etc. Marketing and sales
<i>Competitors</i>	Other large wire-based telecommunication equipment suppliers.	Suppliers of mobile- and other telecommunication equipment.
Pharmacia & Upjohn		
<i>Products</i>	Pharmaceuticals	Consumer health products, OTC products, Rx reclassification as OTC
<i>Customers</i>	Physicians, hospitals, government agencies, etc.	Any end consumers and traditional markets (physicians, hospitals, etc.)
<i>Resources</i>	R & D	Marketing & Sales, R&D, Promotion, Distribution,
<i>Competitors/Markets</i>	Other pharmaceutical companies	Consumer health care, health/ herbal remedies, tobacco, (functional) food companies

AGA		
<i>Products</i>	Industrial and medical gases in various distribution forms.	Industrial and Medical Gases in various distribution forms
<i>Customers/Markets</i>	Manufacturing, process and health industries, larger customers in West and S. America.	Manufacturing, process and health industries, smaller/larger customers in entire Eastern Europe and other emerging markets,
<i>Resources</i>	Industrial gas technologies, industrial gas distribution technologies,	Industrial gas technologies, industrial gas distribution technologies,
<i>Competitors</i>	Main global competitors	Any local/global, small/large, state owned/private competitors
<i>Single in-depth study</i>	<i>Adaptive motors</i>	<i>Creative motors</i>
Couplet		
<i>Products</i>	Trailer coupling mechanical systems, other trailer coupling mechanical systems.	Non-mechanical systems; electro mechanical systems and electro hydraulic systems, trailer-surveillance equipment systems
<i>Customers/Markets</i>	Truck companies in Europe	Truck companies globally
<i>Resources</i>	Production competencies.	Hydraulics, pumps, oil/chemicals, electronics, sensor technologies, R&D, marketing & sales, production.
<i>Competitors</i>	European trailer coupling mechanical systems assemblers and manufacturers.	Global trailer-surveillance equipment companies.

Table 10.3: Cognitive focus of adaptive and creative strategy motors and a comparison with the single in-depth study.

The fact that collective cognitive structures in the adaptive motors appeared to be more defined and structured in comparison with the creative motors is an important indication of their potential to adapt and enact the strategic puzzles. The adaptive motors exhibited inertia before finally accepting and promoting the strategies. This finding is in accordance with prior studies, which have noted the difficulty of changing existing managerial frameworks and organizational cultures when confronted with environmental changes or internal strategy innovation (e.g. Dougherty and Heller, 1994; Johnson, 1992; Prahalad and Bettis, 1986, 1995).

The collective cognitive structures of the adaptive motors were clearly more rigid as regards the strategic puzzle and were slowly changed through the continuous iterations of the teleological processes. At Ericsson and Pharmacia & Upjohn it took more than ten years before the new strategies were recognized and managerial

frameworks and cognitive structures were more completely changed. Even over a decade after the initiation of the new strategies, there were still individuals at these companies who regretted that new values and beliefs regarding the strategic directions had become dominant.

The creative motors, on the other hand, did not seem to have this inertia. The managerial frameworks or cognitive structures of the actors in the creative motors were far more flexible, unstructured and loose. They allowed for new interpretations of technologies, products and markets. The fact that learning dynamics in the creative motor seemed more based on inductive reasoning processes means that there were no firm frames or structures in terms of market, resource or industry focuses at the outset, in contrast to the adaptive motors. One interesting observation in comparison with the single in-depth study is that the new president in Couplet was externally recruited from an entirely different industry. Most probably this made him see things differently, and he became a driver in the creative motor.

The observation that the adaptive motors tended to be myopic and rejected knowledge-assimilation practices which went beyond the scope of historic and prevailing strategies, beyond current industry and resource positions, is in accordance with earlier research. There is a tendency to extrapolate previous directions of evolution in strategy and structure (Miller and Friesen, 1984). The adaptive motors were disposed to narrow down the set of values, assumptions and beliefs in regard to strategic direction. They were dominated by more structured and simple cognitive structures compared to the creative ones, which appeared to be less definite and structured.

This is consistent with Miller's (Miller, 1993; Miller and Chen, 1996) findings that success in the long run will cause organizations to become "simple". The adaptive motors were focused on historically successful strategies. Ericsson had been extremely successful in digital switching with its AXE product. Similarly AGA had been successful in its traditional Western and South American markets, even if the conglomerate structure was deteriorating. Pharmacia (later Pharmacia & Upjohn) had a successful growth record in the pharmaceutical sectors and, similarly, Couplet had a successful record in the trailer coupling mechanical systems market.

In Miller's (1993) words, the adaptive motors of these companies were characterized by "strategic simplicity," which implies that over time most successful

organizations become simpler and alternative models of the world and strategy fewer in number. The sources of much new and alternative knowledge are lost and, thus, the ability to learn decreases. The analysis of the adaptive motors confirms Miller's (1993, p. 122) proposition: "In successful organizations, managerial world views will become more homogenous and will focus on ever fewer objectives, issues, and cues from the environment". The difference between the two motors as regards the *learning dynamics*, *knowledge-assimilation practices*, *collective cognitive structures* and related *sensemaking* discussed in this and the prior chapter will be analyzed and examined further in the next chapter. In particular, the implications for the definition of the strategy content – process relationship and strategic management theory will be discussed.

10.9 A Third Strategy Sub-Process

10.9.1 A Friction Process

The evaluation of the cases showed that there were considerable discrepancies between the creative and adaptive motors and, moreover, that they were in conflict. The friction between the motors was in some instances serious. At Ericsson there were repeated suggestions to dismiss totally the strategies generated by the creative motor. Similarly, at Pharmacia & Upjohn there were proposals to divest Nicorette in the beginning and later to sell the OTC business or at least not to make any further investments in it. The sometimes friction-filled processes of interaction between the two strategy motors and their learning dynamics seem to have been important in leading to the strategies that ultimately resulted.

The strategies were created and developed in the creative motor, and the adaptive motor incrementally adjusted the view of corporate strategy and finally changed it in a radical way. The tension and interaction between the motors seem to have been important for each of them. In the creative motor the friction mobilized energy, furthered the coordination and combination of knowledge and sharpened arguments. In the adaptive motor the friction forced an adaptation of prevailing strategic views and finally triggered a strategic change. In other words, a third important strategic sub-process, a *friction process*, seemed to have been involved.

Although not documented in detail, this third strategy sub-process seemed to have played an important indirect role in the development of strategy.

The role of conflict between different strategic views and of company politics in strategy development has also been emphasized in several strategic management perspectives (Bower and Doz; 1979, Johnson, 1987; Pascal, 1990; Pettigrew, 1977). The focus here, however, is less with the political aspects and battles per se and more with the underlying processes of tension and organizational learning. The friction between the two motors essentially had the character of a *dialectical process*, in which the adaptive motor, promoting the historic and prevailing strategies, represents the *thesis* and the creative motor, generating the new strategy, stands for the *antithesis*. They were both candidates for the final strategy.

A third possible outcome of the struggle was a strategy that constituted a compromise between the two, a *synthesis*. Both the antithesis and the synthesis outcomes represent strategic change, while thesis indicates status quo and keeping the historic strategy while dismissing and essentially extinguishing the creative motor.²³² This last case, where strategy creation and initiatives are completely rejected (thesis dominates), has not been investigated in this study. However, it is important to note that many, probably most, creative motors are discarded at an early stage (cf. NIH – “not invented here” syndrome, Katz and Allen, 1982). Figure 10.1 provides an overview of the friction process.

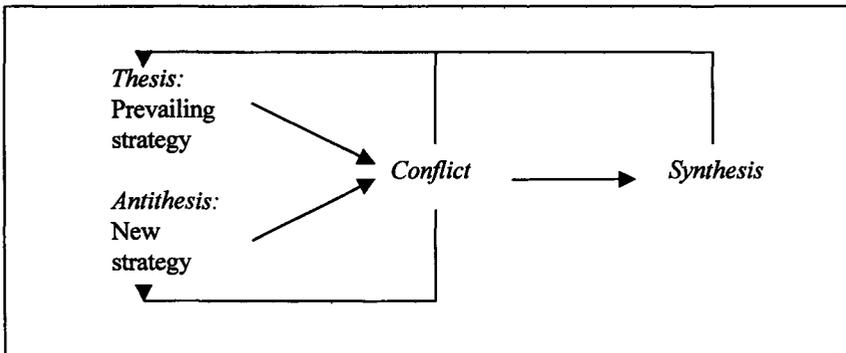


Figure 10.2: A dialectical friction process.

²³² van de Ven and Poole (1995) describe a dialectical organizational change process as one that has at least two entities (i.e. the adaptive and creative motors) that oppose each other in a social and/or physical venue (there were sharp conflicts in all cases) and where the outcome consists either of a new entity, different from the other two, or the defeat of one, or a stalemate among the entities (creative motors or a mixture of the two motors dominated the outcomes).

The friction process involved the ongoing interplay between the learning dynamics and collective cognitive structures in the creative and adaptive strategy motors. The friction process was an intertwined one in which new resources, capabilities and markets, formed in the creative motors, came together with the adaptive motors and formed further new elements and interpretations of the strategic puzzle in that motor. In this way new strategies and collective cognitive structures were carved out.

It appears as if the resistance of the adaptive motors and the persistence of the creative motor resulted in conflict and friction that had an indirect, but important, impact on the development of strategy. It mobilized the creative motors and, similarly, adjusted and adapted prior strategic views in the adaptive motors incrementally towards strategic change. It is the conflict and tension between the motors that strike an observer. However, it must be acknowledged that the process taking place between the two motors also included interaction and dialogue and that it increased understanding and produced reconciliation over time in both motors. The understanding of an emerging strategy is facilitated through friction and interaction. A dialogue between the two diverse motors appears to be more productive than one within each individual motor.

One also wonders whether the preoccupation of the adaptive motors with prevailing strategies and matters other than the strategic puzzles, made room for the creation of the strategies. It seems as if the creative motors in the companies were able to continue their strategy development thanks to the fact that the attention of the adaptive motors was often focused elsewhere: Ericsson's adaptive motor had their hands full with EIS (Ericsson Information Systems); the adaptive motor in Pharmacia & Upjohn and its predecessors had to focus on the industry consolidation, mergers and acquisitions and integrating different units into the company; finally, AGA and its adaptive motor were concerned with divestments and focusing on the core business in order to increase profits.

The dialectical friction processes in the cases differed in character. It has previously been observed that strategic conflict was most obvious at Ericsson and

Pharmacia & Upjohn and that the creative motors ultimately managed to dominate the final strategy in these cases. The newly created strategies were fundamentally based on the antithesis and the learning dynamics and knowledge generated in the creative motors. In addition, new collective cognitive structures were developed. What had been more peripheral characteristics of knowledge generated by the creative motors assumed a more central position in the companies. Ericsson today describes itself as a mobile telecommunications company, and consumer health care is at centre stage in Pharmacia & Upjohn's description of their strategies.

In the cases of Couplet and AGA, it was more a question of a synthesis in which the friction and interaction between the creative and adaptive motors finally resulted in middle-ground strategies. The strategies and collective cognitive structures were changed in these cases as well, but not as radically. Different characteristics of the manner in which strategy developed were explained in terms of *strategy-creation paths* in Chapter Eight.

In the perspective of the dialectical friction process, the entrepreneur-embedded paths (Ericsson and Pharmacia & Upjohn) correspond to antithesis, and the resource-embedded paths (AGA) and customer-embedded paths (Couplet), to synthesis (see Figure 10.3). In essence the entrepreneur-embedded strategies resemble a process of "creative destruction" (Schumpeter, 1934), in which antithesis takes over. Status quo, or the industry-embedded path, is to adopt the thesis in maintaining the prevailing strategy.

Product Customer		Present	New
		Industry embedded: <i>Thesis</i>	Customer embedded <i>Synthesis</i>
Present			
New	Resource embedded: <i>Synthesis</i>	Entrepre- neur- embedded: <i>Antithesis</i>	

Figure 10.1: Strategy creation paths and outcomes in terms of the dialectic friction process.

The new strategies were created via learning dynamics in terms of knowledge-assimilation practices and adjustment of collective cognitive structures in the strategy motors and in their friction and interaction. At Ericsson and Pharmacia & Upjohn, learning dynamics in the creative motors played a larger role, since there were no relevant blueprints or well-defined collective cognitive structures for the strategic puzzles. Instead, the strategies and collective cognitive structures were successively developed via various knowledge-assimilation practices in the creative motor.

In the other cases there were some relevant frameworks available in terms of collective cognitive structures to build on. At Couplet there was a close relationship with customers, especially Roadstar, even if the company did not have the resources and technologies needed. AGA already controlled these factors, but on the other hand they did not have the customer or market knowledge required. The purely entrepreneur-embedded strategies of Ericsson and Pharmacia & Upjohn involved more coordination and combination of knowledge of both resources and markets, than being anchored in these from the start and adjusting existing collective cognitive structures. The resource- and customer-embedded strategies of AGA and Couplet were based more on historic resource and market knowledge, respectively, even if coordination and combination of new knowledge and adjustment of collective cognitive structures played an important role as well. The creative motor dominated at Ericsson and Pharmacia & Upjohn, while there seemed to be more of a balance between the two motors and, thus, some influence from the adaptive motors at Couplet and AGA.

10.9.2 Corporate vs. Business Strategy

The division between the two motors could be interpreted as a development of business strategy in the creative motor and corporate strategy in the adaptive motor. The adaptive motor finally changes corporate strategy via the friction process with the creative motor, as discussed above. However, this is done after years of strategy development in the creative strategy motors and after years of slowly recognition in the adaptive motors. Hence, a closer examination reveals that the distinction between corporate and business strategy is not that clear cut in strategy creation. After all, the

essential choice of what business to be in was basically made in the peripheral strategy creation motors while the adaptive ones slowly recognized and finally accepted the new direction and subsequently focused on competition and strategy issues given the new business. In this sense, as with strategy planning vs. strategy implementation, the roles are essentially reversed as regards corporate vs. business strategy compared to traditional strategy views.

The sharp division between corporate and business strategy in traditional views is connected to the separation between strategy content and strategy process. This is in contrast to the situation in strategy creation, where strategy process and content were shown to be closely connected and integrated. Another, related, difference concerns the separation between two basic corporate strategy questions. Traditionally corporate strategy has been described in terms of two essential issues (Goold et al., 1994). Firstly, in what businesses should a company invest its resources and, secondly, how should the company influence the businesses under its control. None of the questions seem to consider strategy creation. The first one primarily concerns portfolio decisions or, possibly, new venture decisions and the second corporate influence once the decision has been made. Accordingly, there appear to be little room for strategy creation where corporate strategy influences business strategy during its development. Organic development of corporate strategy or strategy creation is essentially omitted in this traditional view of corporate strategy. *The fact that strategy content and process mix in strategy creation, as described in this study, blurs the distinction between corporate and business strategy and between the two basic corporate questions.* The empirical findings in this study show a more dynamic relationship between these two issues. They emphasize the relationship between corporate and business strategy in strategy creation and the relationship between the dual questions of corporate strategy. These questions are more integrated than perceived in traditional views of strategy and the divisions are essentially artificial in terms of strategy creation.

10.10 Summary and Conclusions

The more detailed investigation of the strategy motors, which commenced in the prior chapter and was finalized in this one, revealed that they differed in terms of general structure and characteristics. The starting point was an examination of the creative motors. These were identified as involving a *life-cycle process* with a distinct character and structure compared to the adaptive motors, which had the character of a *teleological process*.

In addition, the analysis showed that the motors differed in terms of their location and learning dynamics. The creative motors were located outside the center of the MNCs in peripheral projects, units and divisions, while the adaptive motors were centrally located.

The learning dynamics in the creative motors were based more on inductive reasoning and were externally directed, outside and towards the periphery of the industries. The adaptive ones, in contrast, seemed to be based more on deductive processes and confined to the industry and resources in question. There was a clear difference in the character of the learning dynamics in terms of knowledge-assimilation practices and collective cognitive structures.

Four different types of knowledge acquisition were identified in the motors. Exploratory learning processes predominated in the creative motors, while the adaptive ones seemed to involve more of exploitation. Declarative learning had a more informal and exploratory character in the creative motors, while it seemed more formal and standardized in the adaptive motors. Procedural learning was based on prior industry experience and routines in the adaptive motors and more on experimental trial and error in the creative motors.

The fact that the knowledge-assimilation practices differed between the motors can determine the strategy content – process relationship in the sense that *specific learning and knowledge processes might be linked to certain strategy actions and outcomes*. It might also determine which particular mechanisms in the creative motors spur strategy creation and the choice of resource-, customer- and entrepreneur-embedded strategy creation paths, in contrast to the more status-quo-oriented mechanisms in the adaptive motors geared to industry-embedded paths. A brief overview of the characteristics of the two motors is provided in Table 10.4.

	Creative motors	Adaptive motors
Learning dynamics: - <i>Focus</i> - <i>Process character</i>	- strategic puzzle - exploration/inductive	- prevailing strategy - exploitation/deductive
Knowledge-assimilation practices: - <i>Focus</i> - <i>Process character</i>	- peripheral and external to organization and industry - exploration	- existing organization and industry - exploitation
Collective cognitive structures: - <i>Focus</i> - <i>Process/Sensemaking character</i>	- new values, beliefs, etc. - inductive	- existing values, beliefs, etc. - deductive

Table 10.4: Characteristics of the two strategy motors.

The analysis in terms of various types of learning is linked to the strategy creation paths, discussed in Chapter Eight. Exploitation seem to play the dominating role in *industry-embedded paths* (promoted by the adaptive motors), while exploration prevailed in entrepreneur-embedded paths. When it comes to *resource-embedded paths*, experience and routines in regard to resources play an important role together with exploration. In the case of *customer-embedded paths*, exploitation and routines related to customers played a significant role in conjunction with exploration.

An overview of the connection between the strategy creation paths and the various types of learning is provided in Figure 10.4 below. The next chapter summarizes the findings in the study and examines *the origins and drivers of strategy creation, and the barriers to it*, in greater depth. Particular attention is devoted to the learning dynamics and knowledge-assimilation practices involved and to the collective cognitive structures. A tentative model of strategy-creation and strategy process-content relationships is presented in the final chapter.

Product		Present	New
		Customer	
Present		Industry- embedded: exploitation	Customer- embedded: exploitation/exploration
	New	Resource- embedded: exploitation/exploration	Entrepre- neur- embedded: exploration

Figure 10.4: Strategy creation paths and various learning types.

Chapter 11

STRATEGY-CREATION: ORIGINS, DRIVERS AND BARRIERS – IN SEARCH OF NEW STRATEGIC MANAGEMENT EXPLANATIONS

11.1 Introduction

Since the early writings, strategy research has been concerned with both external positions and opportunities and internal resources and capabilities (e.g. Andrews, 1971; Ansoff, 1965; Hofer and Schendel, 1979). Some theories have emphasized one or the other to a higher degree, prescribing market (e.g. Porter, 1980) or resource positions (e.g. Rumelt, 1984). These external and internal positions grow out of complex technological, market, competitive and regulatory circumstances. New resource and industry positions are created out of strategic management practice in this complex context. Strategy-creation involves managerial and organizational judgments and decisions influenced by cognitive and contextual properties in this complexity.

The analysis in this study shows that many contemporary strategic management and organizational-change theories seem to be insufficient in confrontation with the complexity surrounding strategy-creation issues. Many theories appear to be less able to capture strategic management practice when foresight horizons are complex, as in strategy-creation. Strategy content theories do not seem to consider complexity and do not include clarifications of process. One reason is their economics-based assumptions, which appear to neglect several important aspects of strategy-making (e.g. processes, uncertainty, cognition, coalitions). Industrial-organization (IO) views disregard endogenous factors and how industry positions are developed and created over time. Similarly, the development and creation of resources and capabilities is often neglected in many traditional resource-based views (RBVs), in which the organization is solely considered as a fixed bundle of assets. In contrast, strategy-creation, involving

complex foresight horizons, seems to involve a dynamic interaction of market forces and resources.

To get beyond the one-sided exogenous focus and the static supply and demand of resources and move into more dynamic properties, involving coordination and combination of market and resource factors, a single focus on economics seems to be insufficient. In the study of strategy-creation and strategy-making involving complex foresight horizons, organizational beliefs, values and knowledge are fundamental, and behavioural theories appear more relevant. Organizational learning and various learning dynamics seem particularly applicable, since strategy-creation involves accumulation and integration of knowledge.²³³ The economics tradition of strategy research has significantly contributed to the development of the strategy field during the last decade, but now it seems to be time for behaviourally oriented research to assume a larger role. Within economics-oriented research on strategy content, the most encouraging ideas for the future appear to be coming from efforts to open the way for more dynamic perspectives in terms of managerial and organizational processes (e.g. the dynamic capability perspective, Teece et al., 1997).

Strategy-content theories implicitly rely on a strategy-formulation process view of strategy (Porter, 1980; Barney, 1986a). However, it is not particularly controversial to assert that the classical and traditional view of strategy as a conscious plan, controlled in advance and with a clear separation of formulation and implementation (Andrews, 1971; Ansoff, 1965) has been demonstrated to be erroneous (Mintzberg, 1978, 1990a, 1994; Mintzberg and Waters, 1985; Hayes, 1985; Quinn, 1980). Instead, strategy is an adaptive process in which piecemeal strategic decisions are taken on the basis of continuous mutual feedback between formulation and implementation in an emergent pattern over time.

Unfortunately, interpretations of this latter view seem not to have moved beyond pure descriptions of contextual, political and cognitive restraints. Strategy is portrayed as an ambiguous process in history or, in writings specifically based on organizational-change theories, a more or less uncontrollable process in which

²³³ The comments emphasized earlier of Rumelt, Schendel and Teece (1991, p.22 and p.27) on the influence from the economics discipline on strategy are illustrating: "But the applied nature of strategic management and its extensive scope will require intersection with theory from other social science

environmentally determined mechanisms inevitably determine strategic and organizational change. The latter process is described as guided by either power and politics, random combinations of events, environmental selection or isomorphic forces, all of which leave little maneuvering room for managers (e.g. Cohen et al. 1972; Di Maggio and Powell, 1983; Hannan and Freeman, 1977). If managers are perfectly rational in traditional planning and strategy-content views, they are quite imperfectly rational in these perspectives.

It seems as if a more balanced view is needed, one that takes due consideration of the applied nature of strategy without surrendering it to random and uncontrollable processes. A view based on strategic management practice should recognize mechanisms that make it possible for managers to adapt to, manage, modify and create contextual forces, despite the power of these forces and their influence on the development of strategy. There appears to be a need for a more holistic view of strategic management, one that does not accept all simplistic economics assumptions and at the same time does not solely focus on factors that limit managerial rationality. Such a view needs to go beyond the strategy-content-based predictions of how specific industry and resource structures will influence performance, and organizational-theory-based relationships between the environment and the organization. It should explain *how* these influences and relationships develop in strategic management practice. In brief, it needs to be acknowledged that managers and firms face considerable constraints as a consequence of environmental and strategic complexities, but at the same time have considerable potential to adapt to, manage, modify and create complexity. The substance and ingredients of that practice of strategic management need to be evaluated.

Perspectives emphasizing the development of strategy as an incremental and complex, but purposive process (e.g. Mintzberg and Waters, 1985; Quinn, 1980; Pettigrew, 1985a, 1987a) provide convincing descriptions of strategy-creation and strategic management practice. This current of strategy research recognizes that strategy decisions inherently involve complexity (Mintzberg, Raisinghani and Théoret, 1976). It seems necessary, however, to develop the descriptions of strategy processes in terms of contextual, political, and cognitive factors further and to explore what strategy is about,

disciplines as well." and "Where the coordination and accumulation of knowledge is key, and where patterns of belief and attitude are important, other disciplines will have more to say."

how strategic management practice specifically influences change in strategy content, and what the implications are for managers, strategy substance, and content.

Political and cultural views (e.g. Pettigrew, 1985a; Johnson, 1987) are more specific about strategic change than many other descriptions of strategy process, and Burgelman (1983a, 1983b, 1991) provides a more well-defined view of strategic change and strategy creation. These promising achievements should be helpful in finding more specific explanations of the precise role of strategic management practice and the mechanisms of managerial actions in strategy-creation and management.

Various configurational approaches are related to purposive strategy-formation views. They integrate various perspectives on strategy and describe strategy as different configurations over time (e.g. Miller and Friesen, 1984; Mintzberg, 1990b; Mintzberg and McHugh, 1985; Mintzberg, Raisingham and Théoret, 1976). While strategy can be described and explained in diverse epochs over time as in these views, the question is what the specific managerial mechanisms and implications are. And it does not always appear that strategy develops sequentially in distinct and categorical segments. It seems more likely that strategy development is an interwoven process involving diverse strategies and rationalities simultaneously rather than individual rationalities and strategies as distinct elements in process of episodic stages. In sum, strategy-process views need to consider and to determine in detail the responses of individual firms and their management to limiting forces, in contrast to firm and management inaction. Moreover, it would be beneficial if these perspectives devoted more attention to strategy content and to how strategic change actually occurs.

Much of the research on strategy process and content seems essentially to neglect internal and external *complexity* in strategy-making. In contrast, the applied nature of strategic management involves complexity in terms of both environmental conditions and strategic management practice. It appears as if a more multidimensional view is required. In such a view managers and firms face constraints, but also have maneuvering room and act as active knowledge assimilators and arbitrageurs. *The common ground where research on strategy-creation and strategic management seem most promising is shared by the economics-oriented dynamic resource-based models, emphasizing the mechanisms of capability creation, and behaviourally based organizational-learning models, focusing on the firm as a cognitive entity.* It seems as if

the way in which strategy theory can develop is through the integration of dynamic economics and behavioural perspectives, and, correspondingly, strategy content and process views. Perhaps this could also mediate between “European based” strategy (process) research and “American based” strategy (content) research. Certainly, there is a danger of becoming too eclectic in this integrative effort, but it seems necessary to integrate the views in order to bring in strategic management practice and a focus on the creation of strategy. At this preparadigmatic stage in strategic management, especially as relates to strategy-creation and the relationships between strategy content and strategy process, and because the area by definition is an applied one, concessions must be made to realism at this stage.²³⁴

Essentially, strategy content is ignored in the literature on strategy process, and strategy process is ignored in writings on strategy content. In contrast, this study shows that strategy content and process are intimately linked to each other, at least where strategy-creation is concerned. The strategy-creation processes were clearly not formally planned. On the other hand, they were not entirely constrained by the environment, either, there seemed to be a logic and structure to the events. There was a sense of direction and content from the start, even if the strategies evolved and changed over time. Industry and resource positions were far from identifiable from the beginning, but they emerged out of various types of learning dynamics. Process influenced content and vice versa. The next section provides an overview and summary of the findings in terms of *outer and inner strategy context and strategy content and process*.

11.2 Overview of Findings

11.2.1 Outer Strategy Context

It was observed in the single in-depth case study that the *outer strategy context* was dominated by *complexity*. This character of the circumstances surrounding strategy and of the environment was verified in the multiple retrospective case study. Contexts were complex in virtually all aspects. Technologies, resources, markets and industries were altogether genuinely uncertain. *The complexity involved uncertainty regarding*

²³⁴ Despite the inherent risk of fragmentation, it seems as if behavioural as well as economics-oriented researchers in the field of strategy are promoting a pluralistic development of both theory and

future strategy and, moreover, ambiguity in terms of preferred future state. A manifestation of the complexity is the fact that entirely new industries were subsequently created. The newly created industries were the trailer surveillance industry, the mobile-communications industry, the consumer health care industry and the Eastern European industrial gas industry. In the Ericsson and Pharmacia & Upjohn cases, there was complexity in all dimensions, while in the Couplet and AGA case the complexity was primarily attributable to the technology and market contexts, respectively.

11.2.2 Inner Strategy Context

It was observed in both the single- and multiple-case studies that instead of a single strategy process, there were essentially two strategy sub-processes. The sub-processes were later defined as *two strategy motors*, the *creative* and the *adaptive strategy motors*, which were studied in detail in Chapters Nine and Ten. The two motors differed substantially in character.

The creative motor had a *life-cycle* character that included certain stages of strategy development. Strategy-creation was governed by a logic inherent in the motor, and its learning dynamics focused on the creation of a specific strategy. In contrast, the adaptive motor had a *teleological* character. It was fundamentally an adaptive process in which the view of the strategy depended on the historic and prevailing strategy focus and was subsequently adjusted according to what was learnt about the environment and from the creative motor. The adaptive motor did not follow a predetermined sequence of developments as did the creative motor, but focused on a final state, the ultimate form of the future strategy.

Besides their inherent differences regarding the character of the strategy process, the motors seem to have been connected to different parts of a collective or organizational cognitive structure, as discussed in Chapter Ten. A collective organizational cognitive structure can be viewed as a powerful learning enhancer in the sense that it controls the conditions for various learning mechanisms and contains

methodologies (e.g. Bettis, 1991; Bowman, 1990; Daft and Buenger, 1990; Rumelt et al., 1991; Teece, 1990). However, others have advised against pluralism (Foss, 1996).

heuristics and routines that guide strategy. It provides a basis for mutual understanding within the organization and provides accessible knowledge accumulated over years that can be used in given situations. The different parts of the collective cognitive structure provided a foundation for the manner in which actors in the motor's domain learnt about and made sense of external circumstances. The cognitive structure influenced both learning by observing and learning by doing, but it was also influenced itself by the learning dynamics. The specifics of learning dynamics and collective cognitive structures are discussed in Section 11.3.

11.2.3 Strategy Process and Strategy Content

There was no *strategy content* to be observed in the beginning of the strategy-creation processes. Both of the fundamental strategy questions, *where to go* and *how to get there*, were indeterminate, and there were definitely no answers to them. There was no strategy content, only *puzzles*, which at first were not even considered strategic. First a few indications of the puzzle were perceived somewhere in the corporation, primarily within the creative motor; after some time the puzzle became more defined; still later it came to be considered as *strategic*. The *strategic puzzles* were identified, realized, and resolved over time. Subsequently, pieces were sought out, but also found unexpectedly, and the puzzle assumed an increasingly definite form. The efforts made to find out about developments relating to the strategic puzzle, and the steps taken to realize and solve it, were forming and designing the strategy itself. Strategy content and process developed together. The process gave rise to pieces of strategic knowledge that in turn directed further efforts to put the puzzle together.

Strategy process involved various *learning dynamics* in two *strategy motors*. They included different ways of coordinating and combining knowledge regarding the strategic puzzle. The *creative motors* involved externally oriented and interwoven learning dynamics that were instruments in the definition of new strategic knowledge and strategy content. The *adaptive strategy motors* included learning dynamics grounded in the prevailing industry and resource spheres. These different learning dynamics in the two motors included various *knowledge-assimilation practices* which guided the development of strategy in different ways, differed in nature, and was based

on different elements of the organizational cognitive structure. Learning seemed to be an integrated process of knowledge assimilation and "sensemaking."

The different knowledge-assimilation practices in the two strategy motors were observed to generate different types of *strategic knowledge*. Furthermore, it was noted that various learning dynamics, including different types of knowledge embeddedness, together with knowledge-assimilation practices, generated diverse *paths of strategy-creation*. Besides the traditional *industry-* and *resource-embedded paths*, *customer-* and *entrepreneur-embedded strategy-creation paths* were identified and described.

11.2.4 Summary

The processes of strategy-creation were dominated by various mechanisms for probing the environment predominantly by the creative strategy motors. Different types of learning dynamics, including externally directed knowledge-assimilation mechanisms, were involved. The knowledge-assimilation practices essentially included various forms of learning by doing and learning by observing, which in turn influenced and developed collective cognitive structures and strategy content.

The development of strategy was an integrated mix of strategy process and strategy content. Observations of the interaction between content and process disclosed different paths of strategy-creation: industry-, resource-, customer- and entrepreneur-embedded paths. Learning dynamics, including knowledge-assimilation practices, generated strategic knowledge which was continuously used in strategic action and decisions. It was an iterative process in which learning from implementation contributed to new features of strategy and to new ways of coordinating and combining knowledge, which in turn led to further development of strategy content.

What guided the strategies was a process of use and interpretation of knowledge in terms of acquiring information, forming hypotheses, and using heuristics, through intelligence-gathering, experiences, experiments, and other methods. The collective cognitive structures assisted in making sense of the strategic puzzles, but were also influenced and changed by the development of strategy. In brief, the various steps taken to realize the strategy were also forming it. It was not a question of resorting to analysis and contemplation isolated from action in order to solve the strategic puzzles, but rather of forming and designing strategy in action (cf. Weick, 1987). The use of

external information was intimately linked to its assimilation in the same way as strategy content and process were related. Hence, the capacity to use information "...cannot be conveniently divorced from the capacity to find and acquire information." (Macdonald, 1995, p. 558).

The analysis of the strategy-creation processes observed in the study showed that the *outer strategy context* was dominated by *complexity*. *Strategy content* was essentially a *strategic puzzle*. The *inner strategy context* was divisible into an *adaptive* and a *creative strategy motor*. In each motor *strategy process* had its own specific characteristics involving various *learning dynamics*, ways of coordinating and combining knowledge concerning the strategic puzzle. These concepts are building blocks in an effort to develop a model of strategy-creation in which *strategy-making is partly a process of action in the form of knowledge-assimilation practices integrated with a partly cognitive process involving sensemaking and a collective cognitive structure*. Next the concepts are discussed in terms of *origins and drivers* of strategy-creation and *barriers* to it.

11.3. Origins of Strategy-creation: Strategic Puzzles in Complexity – Opportunities for Rents

11.3.1 Outer Strategy Context

The observations in the single in-depth and multiple retrospective case studies showed in all cases (Couplet, Ericsson, Pharmacia & Upjohn and AGA) that *outer strategy contexts* were characterized by complexity. Strategies in complex contexts, involving complex foresight horizons, have not previously attracted much attention in strategic management, and there seem to be only a few studies (e.g. Calori et al., 1994; Johnson, 1987) in which it has been empirically investigated and analyzed in detail.

Strategic management research appears to provide little guidance and few explanations for strategy in complexity. At the same time it has been emphasized that opportunities to earn rents reside in uncertainty and complexity (Knight, 1921; Rumelt,

1987).²³⁵ Entrepreneurial rents are returns from discovery and invention in uncertainty. They consist of the excess return of a strategy or venture over the *ex ante* cost of the combined resources used (Rumelt, 1987). Essentially entrepreneurial discovery or creation involves discovery of resource value and discovery of new market opportunities. In brief, opportunities for entrepreneurial rent flourish in *strategic complexity*.

The strategy-creation process which was examined involved genuine uncertainty in the sense that the actors had no idea what decisions or actions to take and, moreover, they did not know with any certainty what they wanted to achieve with those actions and decisions, either. This strategic complexity involves not merely uncertainty, but ambiguity as well. Under conditions of uncertainty there are complications in guessing future consequences (March, 1978), but it might be possible to establish certain states of the world, or the revelation of information over time might reduce the uncertainty. When there is ambiguity, the problem is in guessing future preferences; there are no specific desired states of the world, or if there are, they are vague, inconsistent or unstable (March, 1978, 1994).²³⁶ Strategic complexity in this sense was present in each of the cases in this study. The strategic issues or puzzles involved both uncertainty *and* ambiguity. In summary, complexity, strategy and economic rents are closely related (cf. Schoemaker, 1990).

It was clear that the outer context regarding mobile telephony for Ericsson in the late 1970s and early 1980s was genuinely uncertain and complex. SRA (later ERA) did not know whether or how the market would develop, and the future technology and regulatory situation were indeterminate. Similarly, the context for smoking cessation and OTC products for Pharmacia & Upjohn was also characterized by complexity. The situation in the industrial gas industry in Eastern Europe for AGA in the late 1980s and early 1990s was complex in its regulatory, market and technological aspects. Finally,

²³⁵ Knight (1972/1921, p. 310-311): "The only 'risk' which leads to profit is a unique uncertainty...Profits arise out of the inherent, absolute unpredictability of things".

²³⁶ Knight (1972/1921) makes a similar distinction between risk and uncertainty. Risk refers to situations which have many precedents and where decision rules can be applied and the consequences can be calculated. Situations without precedents, on the other hand, create uncertainty, where only subjective probabilities rather than objective frequencies can be applied.

Couplet faced complexity in virtually all dimensions regarding the potential business of non-mechanical systems and trailer surveillance systems.

These kinds of situations without precedent create uncertainty (Casson, 1995) and complexity; strategic decisions and actions are taken for the long term in these uncertain and evolving situations (Casson, 1990) with complex foresight horizons. Strategic complexity prevails in the zone between order and disorder. According to this view, total chaos and total stability are not complex (Simon, 1962). A totally stable environment is characterized by total unconnectedness (Emery and Trists, 1965); here there is no room for strategy, as situations can easily and instantly be optimized. Strategy then becomes a matter of tactics. In the chaotic or "hyperturbulent" environment (McCann and Selsky, 1984), total interconnectedness prevails and the situation is non-manageable, any behaviour will seem random and no strategy is feasible.

There is potential for economic rent in the area between these two states of non-complexity. Here there is interconnectedness, where organizations face considerable turbulence, but they still are able to manage and strategize. On the other hand, under conditions of order and simplicity, where optimization is primitive, there is little potential for economic rent, and where complete chaos reigns, strategy has no meaning and the opportunities for economic rent are also minimal (Figure 11.1, partially adapted from Schoemaker, 1990). It follows from this reasoning *that strategy is meaningful and valuable only under conditions of complexity, in the area between order and disorder* (Regnér, 1994). These conditions appear to have prevailed in each of the cases studied. The strategic puzzles involved complexity and opportunities for rent, a situation that each company managed to exploit.

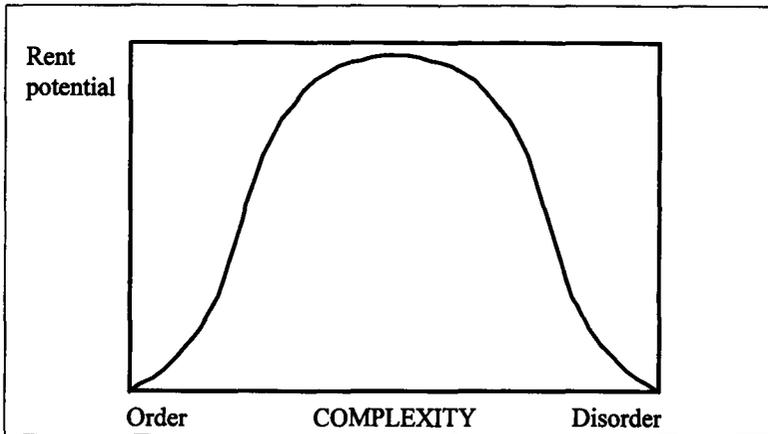


Figure 11.1: Rent potentials abound between order and disorder, in complexity.

There was a whole array of strategy process interactions between internal firm resources and external market forces, thus contributing to strategic complexity and, in turn, to opportunities for rent in the cases examined. These factors have been discussed in terms of strategy-content factors such as entry barriers, market impediments, isolating mechanisms, and frictional forces, including various market imperfections such as different economies, imperfect information, transaction costs, and product differentiation (e.g. Amit and Schoemaker 1993; Porter 1980; Rumelt, 1984; Yao 1988; Schoemaker 1990).²³⁷ However, their full linkage to strategic discovery, creation, changes and process has not been determined. There were various interactions between internal firm resources and external market forces that contributed to strategic complexity and opportunities for rent. These opportunities were developed and used by the companies via various learning dynamics, including different forms of coordination and combination of knowledge. *Various strategy-content positions developed out of this learning dynamics process, which in turn generated competitive advantage for the companies.*

When strategy-creation with complex foresight horizons and strategic management practice is examined, as in this study, the complexity of strategy-making

²³⁷For a similar discussion see Schoemaker (1990, pp. 1183-1184).

becomes apparent. However, in much of strategy research, various assumptions and simplifications eliminate this fundamental part of strategic management. A weakness in many writings on strategy and strategy-related subjects is that complexity, in which strategy is possible and rent opportunities substantial, has been neglected. Either the models presume more or less perfect rationality, which can only be achieved in order/non-complexity, or they stress imperfect rationality to the extent of complete disorder/non-complexity. *This point is also illustrated by the fact that two of the main disciplines on which strategy research has relied, economics and organizational-change theories, are basically suspicious about business strategy.*

In economics any supernormal profits resulting from a successful strategy would dissipate into the market as competition forces rents down to zero (perfect rationality), or the firm is considered to be a product of historic environmental selection rather than of deliberate strategies (imperfect rationality). In several perspectives on organizational change, the dominant role of inevitable external forces requires the firm to adapt passively, leaving no room for strategy (imperfect rationality).²³⁸ The theories based on economics and organizational change do, however, play an important role in regard to states of order and disorder. Once a new strategic insight has become established and order dominates, it loses its value gradually via competitive pressures, according to economics-based views. And when the situation is completely chaotic, rent opportunities disappear altogether. Similarly, it seems reasonable to assume that external pressure and forces of selection govern organizations under chaotic circumstances, in consonance with organizational-change views, while in order there is little need for organizational change.

Basing strategic management theories too rigidly on economics and established organizational-change theories risks excluding the role of strategic complexity and strategic management practice. If competition quickly erodes away profits resulting from strategic insights concerning certain industry or resource positions, strategic management will prove to be of little value. Any theories run the risk of becoming

²³⁸ Organizational-change theories are primarily concerned with the general environment - organization relationship and not how change actually occurs; they tend to exaggerate an organization's passivity. It is recognized that they are not specifically designed to answer questions of strategic management. The aim here is to underscore their unsatisfactory character as theoretical foundation for a coherent theory of strategy. They will only be able to sketch the properties of strategy in non-complex structures which,

redundant, after-the-fact tautologies. Similarly, if external contextual pressure and cognitive limits eliminate the possibility of any strategy, there is little role for strategic management.

11.3.2 Inner strategy context

The inner strategy contexts in the strategy-creation processes were observed to include two separate strategy motors, an *adaptive strategy motor* and a *creative strategy motor*. It was observed in the analysis of these motors in Chapter Ten that they appeared to involve diverse managerial frameworks, which seemed to be rooted in different collective or organizational cognitive structures. This finding confirms suggestions that collective cognitive structures might differ within firms (Hodgkinson and Johnson, 1994). However, it must be acknowledged that collective cognitive structures were not explicitly investigated in the empirical data and were not examined in detail other than in the empirical observations of the two strategy motors.

Managerial frameworks, or collective cognitive structures, essentially influence strategy making in two significant ways. First, they provide an understanding and interpretation of acquired knowledge within the cognitive borders of the structure. Second, they direct attention and perception towards certain parts of the environment. A collective cognitive structure provides a basis for making sense of what the strategy is about and in what direction to pursue it further.

As discussed in the prior chapter, a whole range of organizational cognitive-structure concepts has been used in strategic management. Rather than inventing yet another concept Lyles and Schwenk's (1992) notion, *knowledge structure*, will be used here. Its definition and characteristics correspond best with what was found in this investigation, with some minor exceptions discussed below. The term "knowledge structure" is especially appropriate in this study, since *coordination and combination of knowledge* and diverse *knowledge-assimilation practices* seemed to be a decisive factor distinguishing the two strategy motors.

clearly, from a practical strategic management point of view are less interesting, but also from a theoretical view are less than satisfactory.

Knowledge structure refers to a group of shared premises, goals, beliefs, and assumptions shaping an organizational unit's comprehension of itself, the environment and the relationship between the two. The concept pertains to the section of the organizational or cognitive structure focused on strategic dimensions, primarily industry, customer and resource dimensions. It is a strategy-focused concept with the organization – environment relationship in the center. Essentially the knowledge structure provides an organization's "world view" which influences its strategy and behaviour.

It is important to note that knowledge structure is an organizational-level concept, in contrast to individual cognitive schemas. It relates to concepts of organizational culture or climate and can, similarly, provide a foundation for competitive advantage (cf. Barney, 1986b; Hansen and Wernerfelt, 1989). However, compared to organizational culture and climate, knowledge structure is more narrowly focused on strategy and can be more easily changed. The knowledge structure is linked to the organizational strategy and provides certain strategic action procedures (cf. Lyles and Schwenk, 1992). It involves routines and heuristics accumulated over the years and refined to be used in strategy making. Hence, the knowledge structure includes important sources of competitive advantage for historic and current strategies.

Based on the observations of the two strategy motors, there were some common characteristics regarding the knowledge structures in the two motors, but they also differed to a large extent. The analysis of the strategy motors in Chapter Ten showed that their respective collective cognitive or knowledge structure did not seem to correspond completely. It seems as if the beliefs, values and general "world view" differed.

The collective cognitive or knowledge structures in the adaptive motors were more structured and contained goals, beliefs and assumptions within the realm of prior and current strategies. The knowledge structures of the creative motors on the other hand, were more distant from prevailing strategies and open to a larger variety of values, beliefs, goals and strategies compared to those in the adaptive motors.

The knowledge structure can be divided into a *core* and *peripheral* section (Lyles and Schwenk, 1992). There is extensive consensus in the firm or organization regarding the beliefs and values in the *core knowledge structure*. It supplies the most

fundamental components.²³⁹ There is less consensus regarding the peripheral parts of the knowledge structure. It partly supports the core knowledge structure, but includes more diverse viewpoints and its own subgoals. The *peripheral knowledge structure* involves knowledge concerning actions and behaviour to achieve goals established in the core knowledge structure and knowledge about "...how to interpret environmental and competitor signals..." (Lyles and Schwenk, 1992, p. 162). It contains interpretations and beliefs geared at assimilating and integrating external information. It can vary throughout the organization, partly because of internal division of labor and resulting organizational structures.

The observations reported in the two prior chapters show that the creative and adaptive strategy motors differed in their relation to the knowledge structure. *The adaptive strategy motors essentially appeared to rely on the core knowledge structure. The creative strategy motors, on the other hand, questioned parts of the core knowledge structure and, in particular, depended on the peripheral knowledge structure.* Since the peripheral knowledge structure involves interpretations of environments and competitors, this indicates a variety in ways of making sense of external information in the two motors. The knowledge structure in the creative motors was more complex than in the adaptive ones, since it allowed for more diverse external information to be interpreted and processed, information not limited to current industry and resource positions. The knowledge structures of the adaptive motors, in contrast, were "simpler" and tended to ignore and reject external information not in accordance with prevailing strategies. They were dominated by cognitive simplicity, which promotes "strategic simplicity" (Miller, 1993).

It has earlier been emphasized that the *integration* of external information cannot be divorced from knowledge-assimilation practices as such. Knowledge-assimilation practices in the strategy motors were closely related to perceptions and interpretations of strategy related information. In other words, *the knowledge structures in the two strategy motors seemed to be closely related to the knowledge-assimilation practices.* The manner in which actors made sense of strategic issues, their "sensemaking" (Weick, 1995), was integrated with knowledge-assimilation practices.

²³⁹ Furthermore, it provides "...knowledge about acceptable behaviour or actions for the firm." (Lyles and Schwenk, 1992, p. 162).

Sensemaking is a process closely related to learning dynamics, knowledge-assimilation practices and knowledge structure. The sensemaking in the companies was based on both individual and social activities including different forms of learning dynamics.²⁴⁰ When comparing them, it seems as if the two strategy motors made sense of the strategies in different ways, since one *involved creative learning dynamics* and the other *adaptive learning dynamics*. In this sense the two motors faced the same outer context and strategic puzzle, but learned, acted towards, viewed, and enacted²⁴¹ them in different ways: "Thus, it may be more reasonable to speak of different environments, attended to or enacted by different individuals and groups within the organization." (Pfeffer and Salancik, 1978, p. 74). The observations verify sensemaking as a process²⁴² closely related to and partly grounded in organizations' or units' frames of reference, managerial frameworks, collective cognitive structures or knowledge structures. Sensemaking in the creative motor appeared to be more *inductive* in trying to form a cognitive picture of the strategic puzzle. Sensemaking in the adaptive motor, on the other hand, seemed to have more of a *deductive* character, based on the prevailing strategy. However, any conclusions regarding sensemaking have to be cautious, since individual cognitive schemas and their coordination with others were not studied in detail. In order to investigate this in-depth individual and collective frameworks (schemas and frames) need to be compared over time.

It seems as if there is a *relationship between practices of knowledge-assimilation, via sensemaking, and the knowledge structure*. It was observed in the analysis of the creative motors that they were based on *inductive reasoning*, using heuristics, trying out hypotheses, experimenting, etc. This relates to their more diverse and complex knowledge structures, including a variety of interpretation patterns. They questioned parts of the core knowledge structure. In brief, they relied more on the less conclusive and more provisional peripheral knowledge structure. Hence, the creative

²⁴⁰ For Weick (1995, p. 17) sensemaking is understood as a process that is "1.Grounded in identity construction, 2.Retrospective, 3.Enactive of sensible environments, 4.Social, 5.Ongoing, 6.Focused on and by extracted cues, 7.Driven by plausibility rather than accuracy".

²⁴¹ Weick (1979, 1977) use the word "enactment" to maintain the fact that individuals and organizations often produce the environment they face.

²⁴² It is important to stress that sensemaking is a process and not a fixed interpretation. In this aspect sensemaking differs from interpretation. The former is about an activity or process while the latter can be a process, but also a product (Weick, 1995). In sensemaking the important aspect is the activity, not the result.

strategy motors start out based on the peripheral knowledge structure, including less determined beliefs, values and structures regarding strategic aims.

However, over time a common view of the world and a common mission develop. The knowledge-assimilation practices, focused on external knowledge coordination and combination, and the interaction with the adaptive motor shape and frame a firmer knowledge structure over time. *Basically inductive reasoning processes form a new knowledge structure on the basis of individual mental models which co-adapt.*²⁴³ In other words, the knowledge structure in the creative motors developed and became more specified over time as the creative learning dynamics, including various knowledge-assimilation practices, interacted and co-adapted with the external environment in an inductive-reasoning system. The knowledge structure in the adaptive motors, on the other hand, had become narrower, more specialized and simpler over time, and was based on a deductive-reasoning system which in turn was based on the core knowledge structure.

The reasoning above is in accordance with the earlier observation of more *exploitative* knowledge assimilation in the adaptive motors and more *explorative* knowledge assimilation in the creative motors. In brief, the adaptive motor contains a knowledge structure which narrows the number of environments, situations and problems which this motor is able to encompass. The creative motor and its knowledge structure, on the other hand, is more complex and able to incorporate more diverse external information. Over time, however, it too becomes narrower and more focused as individual mental models co-adapt into a firmer and more specialized knowledge structure. Hence, it, too, risks becoming narrow and simplistic over time.

In summary, the *inner strategy context* was observed to include the two strategy motors that were linked to the *strategic knowledge structure*, referring to common goals, assumptions, beliefs, etc. related to prevailing strategies. The creative and adaptive strategy motors were rooted in the *peripheral* and *core strategic knowledge structure*, respectively. The strategic knowledge structure determined how the motors

²⁴³ Porac et al. (1989, p.399) describe this process of enactive sensemaking: "Over time, individual cognitive structures thus become part of a socially reinforced view of the world...". In addition, Arthur (1994, p.411) has modeled an adaptive complex system of bounded rationality in which agents learn in an inductive-reasoning system: "...as humans in these contexts [complicated and potentially ill-defined] we induce a variety of working hypotheses, act upon the most credible, and replace hypotheses with new ones

structured external events and accumulated knowledge related to the strategic puzzle; they assisted in discerning causal relationships and featured important differences. The core strategic knowledge structure refers to the core goals, beliefs and assumptions in terms of industry, customer and resource focus, while the peripheral one is less defined and includes more diverse views and own sub-goals.

The way in which the two motors made sense, their *sensemaking*, of the strategic puzzle differed as well. Sensemaking in the creative motor appeared to have a more *inductive* character, while it seemed to have a more of a *deductive* character in the adaptive motor. However, once again it must be recognized that the results regarding knowledge structures and sensemaking are tentative given the limitations of the empirical investigation. The specific drivers through which the strategic puzzle and strategy under creation are identified, realized and solved are the next building block.

11.4 Strategy-creation Drivers: Various Learning Dynamics for Coordinating and Combining Knowledge

In the strategy motors, there was no specific *strategy content* at the outset; rather, the companies were facing undefined (strategic) puzzles. In prior strategic management research, strategy content has been defined as an outcome of a single top-management planning process (e.g. Ansoff, 1965, Andrews, 1981), a strategic planning process (e.g. Chakravarthy and Lorange, 1991), or an emergent implementation process in which strategy is either incrementally revealed and developed (e.g. Quinn, 1980) or changes more drastically (e.g. Mintzberg, 1978; Miller and Friesen, 1984; Pettigrew, 1985a, 1987a).

The findings in this study are consistent with the latter views, those of purposive strategy formation, but also differ in certain respects. First, the strategic puzzle was realized and solved over time by two groups of actors. It was not a single process, but a *dual* one as outlined in Burgelman's (1983a, 1983b, 1991) perspective. Second, the fact that there were two distinctive strategy motors is compatible with both the revolutionary (e.g. Mintzberg, 1978) and evolutionary (Quinn, 1980) views, since

if they cease to work...an agent's ideas or mental models compete for survival against other agent's ideas or mental models".

the adaptive motors exhibited more revolutionary strategic change whereas change was more evolutionary in the creative motors. Similarly, it could be argued that the actors in the adaptive motors enacted their environments and learned in an evolutionary way, but changed their strategies more drastically (cf. Mintzberg, 1990b, p.185, in his evaluation of the "configurational" school).

Third, more detailed mechanisms of strategy-making were observed in the current study. Although the emergent character of strategy processes has been manifested in earlier studies, the specific characteristics of the strategy development process and how strategic change actually occurs are still quite unclear. It is indeterminate what the more micro-level mechanisms driving strategy-creation are and how they actually propel strategy. Political, cultural and cognitive/learning views (e.g. Crossan et al., 1999, Hodgkinson and Johnson, 1994; Johnson, 1987, 1988; Pettigrew, 1985a) specify this point to a larger extent.

Burgelman's (1983a, 1983b, 1991) research also provides a more comprehensive perspective; even though it primarily relates to internal corporate ventures and takes an evolutionary perspective, it corresponds well with the findings in this study. It includes inner ecological development and organizational learning and provides a rich foundation for the further development and specification of strategic management practices. *This study builds further on these perspectives and on purposive strategy formation views; it seeks to examine the specific micro-level mechanisms of strategic management practice, strategy processes and organizational learning.*

The observations in the single in-depth and multiple retrospective studies show that strategies become more defined via a variety of learning dynamics. The various steps taken to realize the strategies were also forming the conception of these strategies; certain *knowledge-assimilation practices* spurred certain strategic moves and generated strategic knowledge. In other words, *learning dynamics* influenced strategy outcomes and results. In this way strategy process and content developed together

11.4.1 Organizational Learning

It has been extensively reported in this study that the analysis of the strategy-creation processes showed that diverse *learning dynamics* played an important role in

developing and interpreting the strategic puzzles and issues. Many strategic management scholars (e.g. Burgelman, 1988; Mintzberg, 1978, 1983b; Noda and Bower, 1996) have referred to organizational learning as an important factor involved in strategy processes, but often organizational learning mechanisms have not been further specified. It was earlier established in this and prior chapters that the strategic issues or puzzles at Couplet, Ericsson, Pharmacia & Upjohn and AGA all emanated from an outer context characterized by *complexity*. Learning seems especially appropriate in describing and examining strategy making in complexity. Ideal learning conditions appear to prevail precisely in complexity, a state in-between complete order and utter chaos (Figure 11.2, Regnér, 1994). Simple, stable and benevolent environments, on the one hand, and highly chaotic, rapidly changing and threatening ones, on the other hand, both offer poor opportunities for learning (Hedberg, 1981).²⁴⁴ It has been verified by several studies that organizational learning is a powerful device in the development of organizational intelligence, although it is not easy to bring about (Levitt and March, 1988). Knowledge-assimilation practices involve various forms of observations (e.g. intelligence, noticing) and operations (e.g. experience, experiments), which might generate superior knowledge in situations of complex foresight horizons.

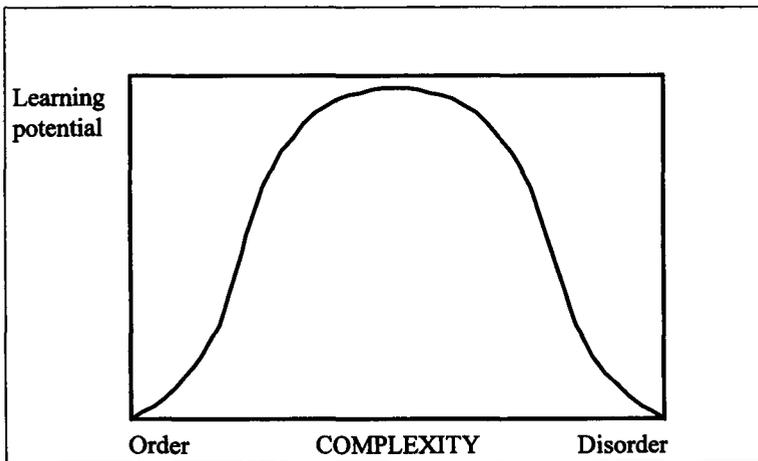


Figure 11.2: Ideal learning conditions and potentials around between order and disorder, in complexity.

²⁴⁴ Note that a distinction is made in this study between complexity and chaos. In Hedberg's (1981) presentation the ability to learn diminishes once complexity has reached a certain level.

There is a complication, however, when discussing organizational and firm-level learning. As discussed in Chapter Six, it might be questioned whether there is such a phenomenon as "organizational learning," as opposed to individual learning. Even though organizational learning is a term often used in strategy and organization theory, there is no comprehensive theory of organizational learning. Without entering the debate on individual versus organizational learning, it can be established that according to the observations in this study, organizations, like individuals, are probably capable of using different forms of learning. Organizational learning is something more than the sum of individual learning.²⁴⁵ *When individuals learn so does the organization. Moreover, organizational knowledge is produced by altering interaction between individuals and parts of organizations and firms, or by initiating such interaction when it has not previously existed.*

Externally directed learning and interactions are of central importance in strategic management since they focus on the matching between the firm and the environment. It could even be argued to be the *essence* of strategy and strategic and organizational change. As observed in this study, *probing the environment constituted a basis for strategy-creation.* Externally directed learning is an area that has attracted surprisingly little attention and has played a remarkable remote role in organizational learning and strategic management literature so far. One reason might be the lack of focus on strategic management practice, as noted in the introductory chapter.

Unfortunately "organizational learning" and "knowledge management" have become inflated and faddish terms used for a whole range of management phenomena. A common misconception in the (managerial) literature is that organizational learning always is intentional and leads to intelligent behaviour. Learning need not be conscious or intentional (March and Olsen, 1979); moreover, the process of learning does not have to lead to improved intelligence or performance (Levitt and March, 1988).²⁴⁶ The barriers to strategy-creation and learning dynamics are discussed in Section 11.3.3.

²⁴⁵ A factor complicating the analysis of learning, as with rationality, is that learning will differ and interact between levels, and there will also be interactions with the learning of other organizations (March, 1991, 1994). For example, what is learned in one part interacts with what is learned in other parts, and the returns and learning from a strategy in one organization are dependent on those of others (network externalities). While illustrating that learning is a relevant analogy, this ecological character of learning can also result in serious learning barriers (discussed below and in the last section).

²⁴⁶ The process of learning can produce superstitious learning and competency traps (Levitt and March, 1988). Organizations can learn incorrectly and can correctly learn that which is incorrect (Huber, 1991).

The focus on learning brings strategic management practice into the analysis of strategy-making and strategy-creation. It seems as if managers themselves interpret the development of strategy in terms of learning and combinations of knowledge, as observed in the quotations in Chapter Nine (Table 9.3). There is a need to focus more on action, judgment and decision-oriented variables which are an actual part of managerial and organizational processes, rather than on more general contextual factors (e.g. power, company politics and organizational culture,) or abstract constructs (e.g. formalization, specialization).

Learning seems more appropriate for strategic management compared to other dynamic processes presented in economics, organizational theory and strategic management such as ecological, political and cultural processes. In particular it relates closer to strategic management practice, the day to day judgments made by managers, and reflects a more rapid dynamic process in this sense compared to others. Speed is a significant factor in the choice of dynamic processes for describing strategic management. Political processes seem extremely difficult to model, and ecological and cultural processes appear to be slower processes, applicable to various strategies across populations of firms or over generations. In brief, on the level of strategic management practice and day-to-day judgments, learning appears to be particularly appropriate. On the level of industry demographics and institutional and societal economic development, other, slower dynamic processes might be more relevant.

11.4.2 Diverse Knowledge-assimilation Practices

It is important to note that there is no exhaustive definition of "learning" even in theories of cognition.²⁴⁷ It is conceivable that learning can take many different forms (Cleeremans, 1993; Langley and Simon, 1981). Two important categories of *knowledge-assimilation practices* were observed and distinguished in Chapter Nine: *procedural* knowledge or learning, or learning by doing, and *declarative* knowledge or

Furthermore, slow and imprecise learning may be preferred to fast and precise learning (Levinthal and March, 1993; Levitt and March, 1988). Likewise, March (1991, p. 86) emphasizes that fast learning need not always be positive and remarks: "...it may be instructive to reconfirm some elements of folk wisdom asserting that the development of knowledge may depend on maintaining an influx of the naive and ignorant, and that competitive victory does not reliably go to the proper educated."

learning, or learning by observing (Anderson, 1995) and between *exploration* and *exploitation*. Based on the findings regarding *knowledge-assimilation practices* and their diverse character in the study of the motors in the single and multiple case studies, it might be suggested that organizational learning involves different forms of learning or diverse knowledge-assimilation practices.

Knowledge-assimilation practices involve coordination and combination of knowledge and inferences from procedural learning, declarative learning, explorative and exploitative learning, which guide strategy formation. In the analysis of the knowledge-assimilation patterns and the dichotomies of procedural vs. declarative and explorative vs. exploitative learning, four knowledge-assimilation practices are distinguished: *formal intelligence, informal noticing, routine experience and creative experiment*.

"Formal intelligence" refers to more formal and intentional search procedures while "informal noticing" concerns more informal and incidental ones. "Routine experience" includes gaining and refining knowledge through implementing tasks or plans, and "creative experiment" relates to knowledge acquisition through various forms of trial and error. These knowledge-assimilation practices differ in terms of the four different conceptions discussed earlier: Formal intelligence and informal noticing are based on rather passive learning by observing or declarative learning, while routine experience and creative experiment are more active and build on learning by doing or procedural learning. Creative experiments and informal noticing are grounded in more explorative processes, while routine experiments and formal intelligence relate more to exploitation. *From the interaction among these knowledge-assimilation practices, knowledge is coordinated and combined; new strategic knowledge emerges and strategy develops in strategy-creation processes.*

It is important to note that the knowledge-assimilation practices are interwoven and belong on a continuum or in a "force field" rather than being distinct and separate (Figure 11.3). Portions of formal intelligence might involve more informal and subjective processes and, thus, be similar to informal noticing. Likewise, experiences

²⁴⁷ Different models of cognition and learning have been presented in cognitive theory. For example ACT (Anderson, 1976), ACT* (Anderson, 1996) and SOAR (Newell, 1990).

based on organizational search for suitable strategies might show features of informal noticing, and, clearly, experience and experiment blend.

A variety of learning concepts have been described in research on strategic management and organizational theory, and the four types of knowledge-assimilation practices are based on earlier conceptions of learning used in strategic management and organizational research. *Formal intelligence* is the formal search in the environment for information and intelligence likely to induce changes in strategy (Ghoshal and Kim, 1986; Ghoshal and Westney, 1991; Gilad, 1989, 1994; Lenz and Engledow, 1986; Porter, 1980; Prescott and Smith, 1989). It relies more on formal and hard data and might involve more or less formalized business intelligence units in directing, collecting, analyzing and disseminating intelligence.

Informal noticing involves informal search for changes and opportunities in the environment (Aguilar, 1967; Daft, Sormunen and Parks, 1988; Fahey and King, 1977; Hambrick, 1982, Jain, 1984; Keegan, 1974, Starbuck and Milliken, 1988). It is based on "softer" and more subjective processes such as casual personal contacts, and perhaps hearsay, gossip and speculation, rather than written intelligence reports. These processes result in hunches or intuitions rather than objective statements (cf. Mintzberg 1973, 1975, 1976).

Routine experience refers to more active processes involving first hand knowledge. In these processes the foundation for strategy is knowledge acquired by direct experience (Argyris and Schön, 1978; Cyert and March, 1963; Levitt and March, 1988; March and Olsen, 1975) either formally through systematic efforts or more informally through accidental and haphazard processes (Huber, 1991). Hence, experiential learning is based on inferences from strategy implementation.

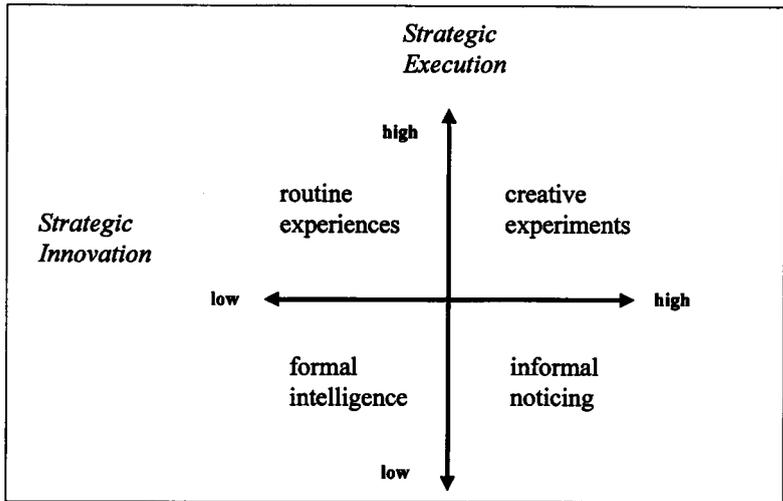


Figure 11.3: Four different knowledge assimilation practices.

Creative experiment includes formal organizational experiments (Lawler, 1977) aimed at adaptation, for example market tests. It also involves experimenting organizations, emphasizing regular changes in goals, organization structures, processes, markets, etc. (Hedberg, Nyström and Starbuck, 1976; Warner, 1984) and the active generation of knowledge through creation of ambiguity and chaos (Nonaka, 1988; 1990, 1994) for the purpose of enhancing adaptability.²⁴⁸

It might be argued that the inclusion of diverse knowledge-assimilation processes in one single context is illogical, since they involve distinct processes and are at least partly based on different theories (cf. Levitt and March 1988; Scott 1992). At the same time, any distinction between them would be rather subjective and indefinite, as they are quite interwoven in practice and to some degree can be substituted for each other.

It is apparent that the knowledge-assimilation practices vary in regard to the balance between exploration and exploitation. Formal intelligence primarily supports exploitation, since focused search tends to be close to action and to emphasize the short run, capitalizing on existing market positions. Informal noticing, further from action and

²⁴⁸ See Huber (1991) for the distinction between organizational experiments aimed at adaptation and experimenting organizations directed towards adaptability.

entailing more holistic use of knowledge, has more features of exploration, investigating new opportunities. Routine experience is more inclined toward exploitation of firm resources and constrains exploration, since experiential learning is particularly sensitive to successes in the temporal and spatial neighborhood of action (March, 1994). Creative experiments via firm resources obviously involve exploration. They are specifically focused on the generation of novelty in the long run, even if the current mix of exploitation and exploration happens to be optimal.

Aside from the exploitation/exploration dimension, it is clear that the knowledge-assimilation practices also differ in regard to declarative and procedural learning, respectively. Routine experience and creative experiments rely on procedural learning, while formal intelligence and informal noticing have more of a declarative-learning character.

There appear to be two types of intertemporal trade-offs between the various knowledge-assimilation practices. First, there is a trade-off between exploration vs. exploitation (March, 1991, 1994), or - in terms of knowledge-assimilation practices - between creative experiments and informal noticing, on the one hand, and routine experiments and formal intelligence, on the other. Too much exploration risks crowding out exploitation, and vice versa as discussed in Chapter Eleven. Moreover, learning in terms of exploration might lead to new strategies and innovations, but their returns are more likely to lie in the future, and competitors may get ahead and earn higher returns in the short-term. A focus on exploitation, on the other hand, provides immediate returns, but innovating competitors may gain an advantage in the long run.

The second trade-off is between procedural vs. declarative learning, or between routine experience and creative experiments vs. formal intelligence and informal noticing. Procedural learning might provide more knowledge regarding the strategy over time and might incrementally develop and refine it. However, competitors may act immediately on existing knowledge and move ahead. Declarative learning, on the other hand, provides information more quickly, but there is a danger that procedural learning will be missed, so that the company might choose a suboptimal path and consequently fall behind its competitors. Figure 11.4 provides an overview of the different knowledge-assimilation practices in terms of exploitation vs. exploration and procedural vs. declarative learning.

	<i>exploitation</i>	<i>exploration</i>
<i>procedural learning</i>	routine experiences	creative experiments
<i>declarative learning</i>	formal intelligence	informal noticing

Figure 11.4: Knowledge assimilation practices in terms of diverse learning characteristics.

From the empirical observations it is clear that the character of the knowledge-assimilation practices varied according to their base in the strategic motors. They were locally situated in the strategy motors, certain knowledge-assimilation practices were more common in the creative motor others were more predominant in the adaptive. Learning was an integral part of the context out of which it grew (cf. Lave and Wenger, 1991). *Knowledge-assimilation practices based on formal intelligence and routine experience predominated in the adaptive motors, while informal noticing and creative experiments were more common in the creative ones.*

Actors in the adaptive sphere informed themselves by more formal procedures and from the implementation of prevailing strategies. This finding is consistent with Miller's (1993, p.126) suggestion that "...organizational intelligence systems increasingly mirror only established perspectives, goals and values." At Ericsson, for example, the adaptive motor was directed towards gathering intelligence primarily about public telecommunication products and markets. The little intelligence that could be collected on mobile telecommunication mostly concerned market and sales forecasts. However, this formal intelligence only captured processed and historical data on mobile telecommunication, which became outdated very quickly because of the rapid developments on that market. The adaptive motor at Ericsson was also focused on learning from experience. However, since there was hardly any mobile

telecommunication business or industry at the outset, there was no particular experiential learning base for the new strategy. Instead, experiential learning related primarily to the implementation and experience of prevailing strategies in switching and other telecommunications, rather than specifically to mobile systems, or else it was based on drawing analogies from this experiences and applying them to mobile systems. Hence, learning was based on the rationale and character of the public telecommunications and switch business rather than the mobile telecommunications business. In other words, existing practices based on formal intelligence and routine experience may have helped to refine strategies for switching, but it did not provide much insight, information or accumulated knowledge relevant to the mobile systems strategy. On the contrary, there was a danger of overly narrowing the range of strategic alternatives and making false analogies. The adaptive motors at the other companies showed a similar character; they were based on established strategies, formal intelligence and routine experience.

In the creative motors the means of learning were less formal and restrictive. Various experimental and informal noticing approaches were used in Ericsson's creative motor. They involved experiments with different technologies, actors and alliances and constant noticing in the field. The situation was similar in other creative motors, for example at AGA. There the process in the creative motor was fundamentally one of trial and error in regard to markets, partners and customers. The difference in knowledge-assimilation practices was similar at Pharmacia and Upjohn. The creative motor included more informal noticing and creative experiments compared to the adaptive motor. In relation to these observations it may be noted that formal intelligence and experience are concepts closely related to IO-based strategy models, while informal noticing and creative experiments seem more closely related to more dynamic RBV models and especially to strategy-process perspectives.

The formal intelligence and routine-experience modes inform strategy in situations of limited interconnectedness, where specific articulated bits and pieces of information can be gathered and certain strategies can be searched for. In situations of greater complexity, which provide only subtle cues and trial and error is the only possible method, strategy is guided by practices of informal noticing and creative experiment. Intelligence and routine experience produced more defined bits and pieces

of knowledge, but these were mostly useful for developing and refining prevailing strategies. Noticing and experimental learning, on the other hand, provided subtle cues of a more exploratory character, leading to more changes in relation to the strategic puzzle.

Strategic knowledge of both kinds spurred new observation- and operations-based practices of knowledge-assimilation which in turn led to additional knowledge. In this way trajectories with different features in respect to strategy process and content can be identified. In certain paths, particular learning bases and knowledge-assimilation practices were predominant. A number of *strategy-creation paths* were observed; these varied depending on the learning base, or type of embeddedness, and the practices of knowledge-assimilation.

Strategy-creation in the Couplet case was based on the coordination and combination of knowledge that included routine experience regarding customers (customer-embedded), but in particular creative experiments in conjunction with informal noticing. In the AGA case, strategic knowledge was resource-based (resource-embedded) in terms of routine experience, but above all included creative experiments and informal noticing. In the Ericsson and Pharmacia & Upjohn cases, strategy-creation had no specific base at the outset. It developed primarily through coordination and combination of knowledge outside the existing industry, resources and customers and included more entrepreneurial activities (entrepreneur-embedded), in which informal noticing and creative experiments were the principal knowledge-assimilation practices.

The diverse knowledge-assimilation practices determine the adaptive and creative learning dynamics and the relationship between strategy process and strategy content. The creative motor included creative learning dynamics, primarily involving creative experiments and informal noticing as knowledge-assimilation practices. By contrast, the adaptive motor included adaptive learning dynamics and essentially involved routine experience and formal intelligence as knowledge-assimilation practices. *This indicates that certain knowledge-assimilation practices or particular ways of learning generated certain kinds of strategic knowledge and paths of strategy-creation, or a particular strategy content.* Once again, however, it is important to stress that the focus is on the relative balance between learning dynamics in the strategy motors. The creative strategy motors included more of creative learning dynamics

including creative experiments and informal noticing and relatively more of inductive sensemaking as discussed earlier in this chapter in comparison with the adaptive motors (and the adaptive motors relied comparatively more on adaptive learning dynamics, and related knowledge assimilation practices and sensemaking).

11.4.3 Strategic Knowledge

It was established above that knowledge-assimilation practices in the strategy motors vary in character. Implicitly this indicates that the knowledge assimilated and generated by the motors differs in the same way. This subject was discussed earlier in terms of the explorative/exploitative and procedural/declarative dimensions of knowledge in Chapter Nine. Formal intelligence generates one type of knowledge and informal noticing another; routine experience produces yet another type and creative experiment another still. For example, formal intelligence generates more knowledge of a "bits-and-pieces" nature, which relates to existing industry and resource positions, whereas knowledge generated via creative experiment is more judgmental and related to industry and resource positions peripheral to and outside existing ones.

The different characters of the knowledge-assimilation practices and the related different characters of strategic knowledge generated is closely connected to the context in which learning is developed. Hence, knowledge-assimilation practices are action and cognitive oriented practices that are rooted in respective strategy motor, its artefacts and attributes and its respective knowledge structure, and these factors together determine what kind of knowledge that will be generated and, in the end, what strategy that will be developed.²⁴⁹

However, as with knowledge-assimilation practices, the knowledge generated naturally overlaps. Furthermore, it is important to note that the process is not one of feeding specific pieces of knowledge into an explicitly formulated strategy or strategic plan. Rather, it is an integrated process of emerging knowledge developed in and for strategic actions and used to generate further knowledge in the strategy-formation process. Hence, knowledge-assimilation practices and the knowledge generated are

²⁴⁹ This reasoning builds on the communities of practice literature (Brown and Duguid, 1991; Lave and Wenger, 1991; Snyder, 1997).

essentially intertwined and influence and develop the knowledge structure in each motor. They go hand in hand rather than one following the other.²⁵⁰

The knowledge-assimilation practices primarily involved combination and integration of existing knowledge rather than discovering or creating completely new knowledge. The knowledge generated was for the most part not entirely new; rather, it involved new combinations of old knowledge. The development of the technologies and innovations as such in the strategy-creation processes did not seem to encounter major obstacles. However, the location and combination of a certain mix of diverse types of knowledge seemed to have been more difficult. These observations are also in accordance with Schumpeter' (1947, 1934) discussion of "new combinations": "...the doing of new things or doing of things that are already being done in a new way..." (Schumpeter, 1934, p.223). It was illustrated in Chapter Nine that the principal actors involved specifically referred to the importance of coordination and combination of knowledge in the development of the strategies (Table 9.3).

11.4.4 The Friction Process: First- and Second-Order Learning

It was established above that the strategy motors included various learning dynamics. They were rooted in different parts of the knowledge structure and involved different practices of knowledge-assimilation. These led in turn to diversity in strategic knowledge and strategy development. In brief, the motors differed fundamentally in character. The major differences in terms of learning dynamics in relation to the strategic puzzle resulted in friction and conflicts. The conflict and crisis between the two motors seemed to be important for both of them. The friction mobilized energy and furthered the coordination and combination of knowledge, as well as sharpening the arguments of the creative motor. At the same time, the friction forced the prevailing views on strategy to adjust and finally triggered a strategic change in the adaptive motor. The conflict and interchange between them was described as a separate *friction process* in Chapter Ten. The fact that friction was involved relates to political aspects of strategy (Bower and Doz, 1979; Pettigrew, 1977). The friction process clearly included political

²⁵⁰ This statement is consistent with purposive formation views of strategy and in particular enactment (Weick, 1979) and sensemaking perspectives (Weick, 1995), which hold that strategy and action are

dimensions and battles as illustrated by several strategy formation views (e.g. Johnson, 1987; Pettigrew, 1985a). As emphasized in Chapter Eleven, the focus here, however, will not be with the political processes per se, but more with the *tension* they imply and with differences and similarities as regards *learning* within and between strategy motors.

Even if there were differences in terms of learning dynamics and conflicts between the motors, the generic type of learning in the two motors leading up to the strategic change had a similar feature. The inherent learning dynamics within the *two strategy motors* had the character of "*first-order learning*". On the other hand, the tension generated between the creative and adaptive strategic motors in the *friction process* triggered "*second-order learning*," producing strategic change in the companies and in the adaptive motor.

Learning is of the *first-order* as long as the operating norms of the organization are adequate for locating problems and taking correct action. Learning within the strategy motors was predominantly of this character. For strategic change, however, organizations need to be able to locate and correct faults in their own operating norms as such; in other words, they must be capable of *second-order learning*. The dichotomy between first- and second-order learning has been the subject of much analysis in discussions on learning in general (e.g. Bateson, 1972) and has been put in focus in relation to organizational learning by Argyris and Schön (1978, 1996). Inspired by cognitive theory and ideas from particular research on learning, others have followed (Fiol and Lyles, 1985).

"First-order learning", "single-loop learning" (Argyris and Schön, 1978, 1996) and "lower-level learning" (Fiol and Lyles, 1985) all refer to the detection and correction of error within a given set of rules and norms which are held constant. There is reliance on routine, and the learning influences only a small part of the organization. "Second-order learning", "double loop learning" (Argyris and Schön, 1978, 1996) or "higher-level learning" (Fiol and Lyles, 1985), also refer to detection and correction of error, but

intimately related.

question and change the set of rules and norms by which actions are evaluated.²⁵¹ The result is long-term effects and an impact on the organization as a whole.

Both *strategy motors* seem to have been engaged in *first-order learning*. The creative motors involved a prescribed mode of change in a predictable way through first-order learning. It related to the peripheral part of the knowledge structure, where the degree of structure was first limited but then successively increased. Similarly, the adaptive motor included first-order learning within the framework of the prevailing core knowledge structure.

Since the learning dynamics and views of the strategic puzzles differed, friction developed between them. This friction assumed the character of a process, which can be termed the *friction process*. Over time, as the success of the creative motor became evident, unlearning (Hedberg, 1981) took place in the adaptive motor. Moreover, since the creative motor threatened the very existence of the adaptive motor, there was a constructive mode of change, which by implication would be unprecedented and discontinuous. The result was a change in terms of strategic norms, values and objectives, etc. and an adjustment of the knowledge structure leading to a more complete change of strategic direction. This *second-order learning* indicates a radical change in the knowledge structure of the adaptive motors (cf. Argyris and Schön, 1978; Prahalad and Bettis, 1986). Thus, the conflict and friction between the two motors triggered second-order learning in the adaptive motor. This role of conflict, tension and crisis in promoting radical change has previously been emphasized in the literature on strategy (e.g. Pascal, 1990; Pettigrew, 1985a;1987b). *In brief, first-order learning prevailed in the two motors of strategic change. As the two motors came in conflict, a friction process was initiated. This process led in turn to second-order learning in the adaptive motor.*

The observation of second-order learning as a result of pressure and conflict emanating from *within* the organization differs from many other observations of second-order learning as being triggered by environmental pressure or declining performance

²⁵¹Note that higher and lower level (Fiol and Lyles, 1985) do not refer to levels in the organization. However, lower-level learning relies on routine and repetition and therefore takes place in well known and controllable situations, which are more characteristically those faced by lower and middle levels of management. The reverse is true for higher-level learning, whose context is characterized by complexity, which tends to be encountered by higher levels of management (Fiol and Lyles 1985).

(Hedberg, Nyström and Starbuck, 1976; Hedberg, 1981; Miller and Friesen, 1980). It has earlier been emphasized that these *external forces* have been necessary in order to spur second-order learning, but this study describes how *internal forces* might provide an impetus for unlearning and subsequent second-order learning. The conflict and tension in the friction motor led to second-order learning, since the creative strategy motor challenged the values, beliefs and norms of the adaptive motor, which were rooted in the core knowledge structures. Over time, however, the friction and interaction also improved mutual understanding and were followed by reconciliation in both motors. In addition, some of the cognitive distortions identified within each separate strategy motor might have been corrected in the process of interaction with the other motor.

11.5 Barriers to Strategy-creation

In the examination of the two strategy motors, it was observed that they differed in terms of inertia regarding the development of strategy, as well as in knowledge-assimilation practices and collective cognitive structures or knowledge structures. In terms of knowledge-assimilation practices, the creative motors were dominated by creative experiments and informal noticing, while the adaptive ones involved more routine experience and formal intelligence. It was concluded that the strategies were discovered and created within the creative motors in opposition to the adaptive strategy motors. The adaptive strategy motors included substantial resistance and inertia in regard to strategy-creation. A full analysis of strategy-creation requires a closer look at the factors that impede it and factors that hinder learning. Below is an examination of bounded rationality and how it imposed barriers to learning in the strategy motors.

The learning dynamics and the knowledge-assimilation practices in the two strategy motors generated different kinds of learning and knowledge, and they were also vulnerable to different potential barriers to learning. Barriers to learning, or cognitive distortions, have been discussed extensively in psychology and organizational theory in order to determine more specifically the nature of bounded rationality. Numerous cognitive simplification processes pertaining to strategy and decision-making (March and Sevón, 1988; Hogarth and Makridakis, 1981; Schwenk 1984), and a range of

impediments to organizational learning and adaptation, (Levitt and March 1988; Levinthal and March 1993; Holland 1975) have been examined. For example, formal intelligence might involve processes of simplification based on anchoring, adjustment and availability, and bias confirming evidence, and induce an illusion of control. In informal noticing, biases involve the exaggeration of signs that are noticeable and frequent, seeing conspicuous circumstances as important effects, exaggerating recent events, etc. The practices of routine experience and creative experiment might involve various forms of "noise" impediments such as problems of connecting actions and outcomes, complicated causalities in the environment, and ambiguous results, as well as other difficulties like distortion and suppression of feedback and various forms of rationalization. Again, it is important to note that all of the knowledge-assimilation practices are so intertwined that they might involve similar barriers.

There is a potential for the shared assumptions, beliefs, etc. in the creative and adaptive strategy motors to result in selective perception, a distortion factor which has been emphasized throughout the history of organizational theory (e.g. Simon, 1976). Cognitive-simplification processes seem to be most noticeable when members of a group or organization share beliefs, values and assumptions as they did within each strategy motor (Schwenk, 1984; Janis 1972)²⁵²: "...[S]implification processes are most likely to impact organizational decisions when there is a great deal of consensus within the decision-making group" (Schwenk, 1984, p. 124). Selective perception is one of the most fundamental biases in information processing (Hogarth, 1987; Hogarth and Makridakis, 1981) and both motors included a potential bias, but it had a different character in each. Among other things it leads people to structure problems on the basis of their own experience, to seek information consistent with their own views and to disregard conflicting evidence.

Accordingly, it might be proposed that one of the most important learning barriers in strategy-creation is the *knowledge structure* itself, together with the attendant knowledge-assimilation practices. The knowledge structure defines a learning framework and contains heuristics and routines guiding strategy, which have been learned over time. That is, the more a strategy is used, the more competence is achieved in it, thus increasing the probability of a satisfactory result and, in turn, the possibility

²⁵² Janis (1972) describes biases and problems in groups dominated by consensus or *groupthink*.

that it will be used again. This statement relates primarily to the *core* knowledge structure on which there was the most widespread agreement at the companies, and, in turn, to the adaptive motors, which were found to be more closely tied to the core knowledge structure.

The companies examined all had good performance records based on successful strategies: in public telecommunications and switching for Ericsson, in prescriptive pharmaceuticals for Pharmacia & Upjohn, in Western (European & American) and South American industrial gas markets for AGA and in trailer coupling mechanical systems assembling and manufacturing for Couplet. These were strategies that had been focused and refined over the years. However, these same factors hindered the development of new and better strategies that would replace the existing ones.

This is an example of the noted and troublesome path-dependent suboptimality of positive feedback in adaptive processes. It involves a serious difficulty as a result of the nature of learning: "learning by using", "competency traps" (Levitt and March, 1988) or "increasing returns" (Arthur, 1989). In other words, the core knowledge structure, which had been a primary organizational asset, was also an impediment to the learning process. The core knowledge structure in the adaptive strategy motor promoted selective perception, or "strategic simplicity" (Miller, 1993) since it had narrowed down and become more focused in terms of certain strategic beliefs, assumptions, values, etc. *It is a considerable dilemma and paradox that the very foundation of prior and current competitive advantages may pose obstacles that will contribute to future disadvantages.*

Environmental or internal changes might be ignored and not seen as relevant in terms of the knowledge structure. Other changes might not match the structure and might even threaten it, or be unmanageable within its context (Johnson, 1988). In brief, while the core knowledge of the adaptive motor was important to prevailing strategies, it contributed to a general barrier to the knowledge required for future strategy-creation in the creative motor.

The fact that the knowledge structure is a potential source of cognitive simplification processes and that its different sections relate differently to the adaptive and creative motors has implications for potential learning barriers linked to the motors and their inherent learning dynamics and knowledge-assimilation practices. The relationship between the knowledge structure and the knowledge-assimilation practices

influences potential barriers to learning. It was earlier established that formal intelligence and routine experience were more frequent in the adaptive motors. These knowledge-assimilation practices are based on the more stable and specified core knowledge structure. Formal business intelligence practices are grounded in a certain industry, technology, customer or product framework. The same applies to the practice of routine experience, which is tied to implementation actions based on prevailing strategies. In other words, both formal intelligence and routine experience are rooted in a well-defined core knowledge structure, and in both there is a danger of cognitive simplification processes that involve selective perception. When the knowledge structure is less well defined, the risk of that type of error is reduced, as in the peripheral knowledge structure, which resorted more to informal noticing and creative experiments. Hence, the creative motors, which questioned the core knowledge structure and relied more heavily on the peripheral knowledge structure, were less likely to involve *these* selective perception distortions.

11.5.1 Learning Barriers in the Adaptive Motors

There are many cognitive barriers or heuristics rooted in consensus groups or groups which share a common knowledge structure as in the adaptive motors. Some of the cognitive simplification processes in goal and strategy formulation relate to this (Schwenk, 1984). An example is "prior-hypothesis bias," in which information consistent with prior beliefs is overvalued. Another bias is "escalating commitment" (Staw, 1976); once investment has been made into a strategic direction more money is invested despite negative feedback. A third one is "reasoning by analogy" (Steinbruner, 1974); simple analogies are used for complex strategic problems. Signs of all three of these were identified in the multiple retrospective study.

First, in the adaptive motor of *AGA* there seemed to be a *prior-hypothesis bias*. There was a hypothesis that economic growth in Eastern Europe would be very slow and that cylinders would remain the dominant form of gas distribution for the first five to ten years. These assumptions were based on experience from other developing markets and the incremental growth of Western European markets. Important investment opportunities, more substantial investments and acquisition as an entry mode

were initially rejected on the basis of this prior hypothesis. However, both the market and other distribution forms turned out to be developing much faster.

Second, at *Ericsson* there was a sign of *escalating commitment* when corporate management increased research and development spending substantially in public telecommunications in the late 1980's and early 1990's, despite clear signs of decreased growth in that area accompanied by vastly increased growth in the mobile sector. Corporate management kept on investing in accordance with the historic strategy that focused on public telecommunications rather than in mobile telecommunications. As it turned out, mobile telephony became the dominant business, and public telecommunication, later Infocom, a low performer and a problem.

Third, in *Pharmacia & Upjohn's* adaptive motor there were signs of *reasoning by analogy*. A "high-margin analogy" was used over the years to dismiss outright any suggestion that the company develop a strategy for smoking cessation and consumer health care. Traditional pharmaceutical products operate with very high margins, while margins in consumer health care products are considerably lower. However, these latter products are often more profitable since the capital turnover ratio is substantially higher. Despite other economic and strategic conditions that also favored the adoption of a consumer health care strategy, the simplistic resort to the "high margin analogy" remained firmly entrenched in the knowledge structure of the adaptive motor. Many years later *Pharmacia & Upjohn* and the industry as a whole have realized the different logic of consumer health care products.

The discussion above shows that a firm's collective cognitive structures or knowledge structures can be seriously detrimental to strategy making and to strategy-creation in particular. However, at the same time as the cognitive simplicity and the accompanying "strategic simplicity" in the adaptive motors resulted in denial, rejection and even active hindrance of strategy-creation, it is crucial to understand that their knowledge structures may have contributed to the historic success of these companies. It was noted in Chapter Ten and previously in this chapter that the companies studied, their adaptive motors and the related knowledge structures historically had been very successful.

This *dual character of knowledge structures* is essential to understanding strategy-creation and strategic change. The focus on a specific strategy, the emphasis on

a particular distinctive competence and, thus, a narrow knowledge structure might be a significant source of success. Indeed, it is argued to be the decisive factor for success in both IO-based (focus on a particular generic strategy/industry position, Porter, 1980) and many RBV writings (focus on particular core competencies/resource position, Prahalad and Hamel, 1990) on strategy, as well as in management literature in general (e.g. "sticking to the knitting", Peters and Waterman, 1982). In fact, the core knowledge structures in the adaptive strategy motors provided refined strategic routines and heuristics developed over the years for use in the specific designated environments of the prevailing strategies, with considerable success.

The dual character of knowledge structures and the related strategic focus, strategic capabilities and competencies have been emphasized in strategy research in recent years. Companies that have developed distinct capabilities and "absorptive capacities" and that are committed to certain strategies can enhance their ability to exploit new technological opportunities and innovate within a particular technological domain and specific environment (Cohen and Levinthal, 1990; Leonard-Barton, 1992). This relates to the resource-embedded strategy path that was observed and discussed in Chapter Eight.

However, at the same time there appears to be a risk that environmental changes, new opportunities and innovations and strategies *outside* the particular domain will be ignored (Leonard-Barton, 1992; Dougherty, 1992). Similarly, there are barriers connected to core knowledge structures in the other strategy-creation paths. In other words, the *industry-, resource- and customer-embedded paths of strategy-creation* all involve path-dependency and the potential risk of being locked into a certain kind of strategy. The danger for each path has been illustrated previously in terms of industry or market myopia (Levitt, 1960), resource or core competence rigidities (Leonard-Barton, 1992) and the risk of being held captive by customers (Christensen, 1997). While path-dependent behaviour might be rational and beneficially serve the firm, it might also block the creation of a strategy for the future (cf. Nelson and Winter, 1982). In brief, strategy-creation or innovation may be neglected or avoided when knowledge structures are firmly entrenched and when capabilities and strategies have been refined and focused.

There might be barriers to learning at the industry and institutional level similar to those at the firm level. Industry structures and the way in which industry actors in general conceive and interpret industry strategies can hinder learning. Hence, the tendency on the firm level to develop a refined and simplistic view of strategy can also develop on the industry level. Various industry-level concepts have been discussed, such as industry-wide practices (Cyert and March, 1963), industrial frames of reference (Hambrick, 1980), industry recipes (Grinyer and Spender, 1979; Spender, 1989) and industrial wisdom (Hellgren and Melin, 1993; Melander, 1997). Similarly, common beliefs and models exist on the institutional level. Institutions and cognitive models are intimately related (North, 1994). Since the adaptive motor is located closer to the current industry and institutional structure and operates more within that realm, there is a risk that it will be even further inhibited by their prevailing belief systems. In other words, the selective perception bias in the adaptive motors may be further aggravated by the closeness to industry and institutional levels and their knowledge structures.

11.5.2 Learning Barriers in the Creative Motors

The creative motors had a lower risk of facing learning barriers connected to consensus of beliefs in the companies and industries. They were anchored in the peripheral knowledge structure, which was more diverse and complex and, thus, was less prone to the selective-perception bias related to the core knowledge structure. In contrast to formal intelligence, which relies on the core knowledge structure and risks focusing on bias-confirming evidence since it serves to develop and support prevailing strategies, informal noticing is more secluded from the core knowledge structure and might capture developments outside its setting. Similarly, while routine experience will be backed by the core knowledge structure as action is heavily based on the employment of existing resources and capabilities in current industry positions, creative experiments have a potential for deviating more radically from the core knowledge structure and possibly for questioning it, since they are intended to create new ideas and beliefs.

It is clear that more exploratory creative experiments and unfocused informal noticing increase the likelihood of establishing alternative perceptions and strategies. However, there would seem to be less likelihood of their being compatible with relevant

environments, market demand and available resources and capabilities: "The search for new ideas, markets, or relations has less certain outcomes, longer time horizons, and more diffuse effects than does further development of existing ones" (March, 1991, p.73). Hence, even if the creative motors were less likely to involve cognitive distortions related to the core knowledge structure, they involved other types of learning barriers and false perceptions.

From the point of view of the adaptive strategy motors and related historically successful strategies - and of the industries in general - the perceptions of the creative motors clearly seemed erroneous, perhaps even irrational, at the outset of strategy creation. The idea of ordinary people carrying around mobile telephones was considered quite absurd by the industry and by many in Ericsson's Public Telecommunication division and corporate management. In fact, the adaptive motors seemed to be best able to substantiate their positions, given their ample foundation of existing knowledge, knowledge structures and industry recipes. There was no solid evidence in the form of market investigations, sales forecasts, technologies, etc. to justify treating mobile telephony as a promising business. Consultants' reports and investigations tended rather to prove the opposite.²⁵³

The perception in the other creative motors was similarly at odds with prevailing industry views and any probability estimates. In the case of Couplet there were no particular indications of that a European electro-hydraulic system market would develop, except perhaps for exclusive heavy long haul trucks. It was also clear that there would be no electro-hydraulic system legislation in Europe. Similarly, there were few indications that smoking cessation and consumer health care would become important segments of the pharmaceutical industry. On the contrary, pharmaceutical companies, other than Pharmacia & Upjohn, did not enter the smoking-cessation market until the late 1980s, and there was little evidence that low-margin consumer health care products would become profitable. In the case of AGA it was far from obvious that the Eastern European markets would take off quickly and become important industrial gas markets. It could be argued that the positions in the creative motors were based more on *wishful thinking* than anything else.

²⁵³ In an early study for Motorola, McKinsey advised against entry (Jöran Hoff, Ericsson).

"Wishful thinking" is another cognitive-simplification process examined by the literature on decision theory (Hogarth and Makridakis, 1981). Wishful thinking is the tendency to believe that the facts are as one would like them to be, which naturally increases the risk of bad judgment. There is an apparent danger of taking a more sanguine view of the world than is justified by the facts.

Wishful thinking seemed to be an important factor in leading the creative motors to pursue their strategies. In the strategies for mobile telephone systems and telephones, smoking cessation and consumer health care, and the Eastern European industrial gas industry, the product and market prospects were highly uncertain and ambiguous, but were endorsed as more or less certain by actors in the creative motors. Some would even argue that the expectations were nothing short of foolish. However, as with the selective-perception bias in the adaptive motors, there is another, possibly beneficial aspect of wishful thinking: It can provide the motivation and energy crucial to carrying out a strategy: "If we are to achieve anything at all, we must believe we can do more than we in fact can" (Elster, 1989, p. 38). If all the obstacles to realizing the strategy, all the conflicts with the adaptive motors and, in particular, the probabilities of success for the strategies (based on market investigations, industry studies, etc.) had been correctly perceived by the leading actors, the creative motors might have halted at an early stage. It might be suggested that misperceptions of this type might actually be beneficial, as they seemed to have been in the cases examined.²⁵⁴ Hence, "foolishness" of different kinds might have its advantages in strategy making under certain circumstances. The creative motors that were studied all developed in a context of complex foresight horizons, and it appears as if foolishness in decision-making under ambiguity might be beneficial.

March and Cohen (1974) have emphasized that "sensible foolishness" is an important ingredient in decision-making under ambiguity, since it allows for a development of preferences, values and aspirations. They stress that goal development and choice are not independent, goals do not necessarily come first and action later, and decision-makers need to combine logics of consequences and appropriateness with a

²⁵⁴ Sutcliffe (1994, p.1374) proposes that misperceptions can be good under certain conditions: "Misperceptions may be beneficial if they enable managers to overcome inertial tendencies and propel them to pursue goals that might look unattainable in environments assessed in utter objectivity".

"technology of foolishness". This seems to have been the case in the creative learning dynamics; certain goals and decisions were defined in an inductive process over time, where actions often preceded strategy logics and strategic decisions.²⁵⁵

At the same time it is important to emphasize that wishful thinking and other biases, as well as methods deliberately involving foolishness, may be disastrous in strategy-making. Clearly, there are grounds for disputing that the probability of strategic success will increase when historic and existing strategic knowledge (and the core knowledge structure) is disregarded and when vague intuition and aspirations are followed instead.

In summary, it was established above that the core knowledge structure was a learning barrier for strategy-creation and strategic change, but that historically it had also constituted an important learning enhancer, a kind of "meta" learning mechanism in the adaptive motors. The creative motors involved other cognitive distortions and learning barriers, but like the adaptive ones, had positive aspects, including a role as a learning enhancer. There is no indication that the creative motors, which drove the development of the strategies which subsequently emerged, were less affected by learning barriers or cognitive distortions. However, they were *different* from the ones in the adaptive motor.

The fact that organizational-level learning barriers seem to differ between organizational sections (adaptive and creative motors) and are rooted in different parts of knowledge structures (core and peripheral) has important implications for strategy making. It implies that strategy-creation can not be expected to emanate from adaptive strategy motors. Strategy is likely to become obsolescent in time as new ideas develop internally or the environment changes, since adaptive motors are overly focused on certain types of learning dynamics, involving certain knowledge-assimilation practices, and since it is based on the core knowledge structure and lacks the capability to discern new opportunities outside the realm of current strategies. At the same time, although strategy-creation is likely to develop in creative motors, it is affected by other learning barriers. The principal conclusion is that various types of learning dynamics, diverse

Entrepreneurial research has also observed that false perceptions and underestimation of investment costs are often helpful in getting ventures off the ground (Sawyer, 1952).

²⁵⁵ This is in accordance with March's (1994, p. 262) reasoning: "They [decisionmakers] need to think about action now as being taken in terms of a set of unknown future preferences or identities. They need ways to do things for which they currently have no good reason. In that sense, at least, they need sometimes to act before they think."

knowledge-assimilation practices linked to different parts of knowledge structures, *differ* among sections of the same firm and generate *different* types of learning barriers.

11.5.3 Barriers to Strategy-creation – Summary and Conclusions

Several other cognitive distortions and learning barriers in the two motors could have been examined on the basis of the analysis in the single in-depth and multiple retrospective studies. The discussion above is quite general and has only scratched the surface of cognitive simplifications and distortions. Many scholarly contributions regarding individual information and cognitive processing have been left out, and industry- and institutional-level biases were only touched upon. In addition, other structural, motivational and political-power-related biases (e.g. Rumelt, 1995) have not been discussed. However, the objective has not been to describe and add to the literature on cognitive misperceptions or organizational inertia. These are better discussed in the literature on cognitive theory and cognitive-related organizational theory.²⁵⁶

The aim in terms of cognitive aspects and distortions of strategy-making has been fourfold. The first objective has been to present an outline of cognitive distortions or learning barriers on an organizational level. *Cognitive distortions seem not only to relate to individual decision-making, but to the organizational level as well.* Fundamental collective cognitive structures, or knowledge structures, seem to be the most prominent barrier to learning at the organizational level. A second objective has been to emphasize the importance of knowledge structure for other cognitive distortions or learning barriers related to strategy making. *The argument is that the knowledge structure is a critical source of many different types of biases.* It provides the setting for strategy-making and knowledge-assimilation practices and, hence, many learning barriers. A third important issue is that there seems to be another aspect to each cognitive simplification bias or heuristic. *Under certain circumstances they are beneficial for strategy making, while under other conditions they might become harmful.*

²⁵⁶ The fact that there are a number of distortions of cognitive, political and structural character in strategy making is well established and discussed at length in organizational theory: a short overview was provided in chapter six.

They seem to have a *dual character*.²⁵⁷ In particular, it seems as if cognitive simplification processes or heuristics related to the knowledge structure are beneficial as long as the latter is in balance with the competitive environment and current market needs. However, when these factors change, it is often too late to change the knowledge structure. Similarly, the firm or organization risks being locked on to a path dependent track which prevents it from gaining a lead on others in terms of strategy-creation and innovation. The fourth and most important aim was to show *that the learning barriers vary between the creative and adaptive motors because of differences in location and in their relationship to the knowledge structure. In other words, there is a fundamental difference between the strategy motors in terms of learning barriers, as well as in knowledge-assimilation practices and knowledge structure.*

The adaptive motors included adaptive learning dynamics and primarily routine experience and formal intelligence practices and were based on the core knowledge structure. This produced certain selective perception biases tied to the historic and prevailing strategies, such as escalating commitment, prior-hypothesis bias and reasoning by analogy. A case in point is that of corporate and public telecommunication and switching management at Ericsson, which primarily learned and generated knowledge about strategy through formal intelligence reports and routine experience from the public telecommunications and switching area. The company relied on its historically successful strategy in switching (AXE, the digital switch), on which their values and beliefs were based. This bias led the company to disregard and reject the mobile telephony business and to escalate its commitment to the prevailing strategy instead.

The creative motors included creative learning dynamics and essentially creative experiments and informal noticing, and were connected to the peripheral knowledge structure. This generated different biases such as wishful thinking. Hence, SRA (later ERA), in contrast to the adaptive motor of Ericsson, learned primarily through creative experiments and informal noticing in seeking to solve the mobile telephony puzzle. SRA (ERA) focused outside the prevailing strategy, its industry and resource domains and its related strategic values and beliefs. This focus led SRA(ERA)

²⁵⁷ Behavioural decision theories have also emphasized that the biases or heuristics may in fact improve decisions (e.g. Tversky and Kahneman, 1974).

to neglect several obvious obstacles in developing mobile telephony and in wishful thinking regarding its future potential.

The four factors discussed above lead to an important conclusion about learning barriers. Whether they are to be regarded as barriers or "learning enhancers" depends on their relative position in relation to the prevailing strategy, the external environment and potential internal strategy-creation initiatives. It is clear that no single motor or learning dynamics can be judged to have been "right" or "wrong" in terms of their posture versus the strategic puzzle. Both included learning dynamics that were "right" in certain respects and "wrong" in others. The reluctance in the adaptive motors to recognize and address the strategic puzzle at first secured the status of the prevailing successful strategies, without which the companies might have not been able to fund the new ones. It also forced the creative motor to adjust and to refine its actions and moves. On the other hand, the adaptive motors hindered and delayed full adoption of the new strategies by the company at an earlier stage. Similarly, the early choice by the creative motors to pursue the new strategies enabled the companies to secure successful positions in the respective businesses and to forge ahead. On the other hand, in rushing into new business areas, the companies took high risks in the face of uncertain outcomes.

It seems less fruitful from the perspective of strategy-making and strategy-creation to expand the study of cognitive and other distortions and identify and enumerate more pathologies. As discussed above, there is an aspect of the learning barriers that may sometimes have beneficial consequences. The learning barriers, cognitive distortions or irrationalities could thus be interpreted as advantageous in certain strategic situations.

The focus in many cognitive-related organizational studies has been on identification of as many distortions as possible and on subsequent efforts to correct them (e.g. Russo and Shoemaker, 1989). Since the introduction of the concept of bounded rationality, it appears as if the focus has been on finding a remedy to it: "Bounded rationality, for Simon and other economists that use the notion... is something to be overcome as much as possible through knowledge of cause-effect relationships, better information and searching techniques, better communication devices, and greater clarity about our goals" (Perrow, 1986, pp. 122-123). *The question is, however, why boundedly rational human beings should be expected to be wholly rational in correcting*

their bounded rationality. Organizations often seem to prosper despite - or perhaps because of - their bounded rationality. Notwithstanding all the cognitive and information-processing limitations identified by organizational (March and Simon, 1958; Simon, 1957), behavioural (Kahneman, Slovic, Tversky, 1982; Tversky and Kahneman, 1985) and strategic management theorists- (Hogarth and Makridakis, 1981; Schwenk 1984) strategy makers and strategy-making firms seem to come up with remarkable strategies. The complexity surrounding the strategies examined in this study was extreme, and several cognitive distortions and learning barriers were present; nevertheless, the companies could successfully form their strategies. Instead of focusing on an ever greater number of management pathologies and trying to correct them, it seems to make more sense to examine the connection between the distortions and biases and certain organizational processes and, in particular, how these distortions and biases actually operate in strategy processes.

One interesting issue to investigate is why some cognitive filters allow new ways of thinking, experimentation and new strategies while others do not. There is also a need to explore the role of less definable and "softer" factors outside the realm of pure and explicit decision-making; softer factors, like intuition, emotion and insight. Mintzberg (1990), in evaluating cognitive strategy perspectives, and Weick, (1995, p.57), in discussing sensemaking, emphasize these aspects as well, rather than "...gloating over the errors, misperceptions and irrationalities of humans."

It appears to be more interesting to determine what strategic management and organizational behaviour actually are, rather than to determine what they fail to be, and to determine the circumstances under which simplification heuristics and other distortions are beneficial, rather than specify how to correct them. *It seems especially important to shift the focus from distortions to capabilities when studying simplification heuristics.*

This study has made a first attempt to examine the learning dynamics in strategy making, including capabilities in terms of knowledge-assimilation practices and knowledge structures, as well as filters in the form of learning barriers. For strategic management theory it is most interesting to identify and characterize different types of learning dynamics and to try to map their capabilities as well as their biases. *It seems as if "rational" as well as "irrational" or even foolish mechanisms both may have an*

important role to play in strategy-making, but at different times and in different situations.

11.6 Summary and Conclusions

An alternative perspective of strategy creation and strategy process – content relationship can be determined based on the summary of the findings and the defined constructs above. The strategy motors include knowledge assimilation practices based on various knowledge and learning forms. The creative motor includes more of informal noticing and creative experiment knowledge assimilation practices compared to the adaptive motor, which involves relative more of formal intelligence and routine experience. The knowledge assimilation practices in the creative motor primarily develop explorative knowledge which, in turn, generate new strategic knowledge and a new knowledge structure in an inductive process. In the end a new strategy content is produced. The strategy motors seem to be linked to different sections of an organizational knowledge structure. The creative strategy motor is related to the peripheral, less stable and fixed, section of the knowledge structure and the adaptive motor to the core, more stable and fixed one. *Strategy creation is an iterative and recursive knowledge coordination and combination process involving diverse knowledge assimilation practices and the peripheral knowledge structure.*

In summary, a creative strategy motor involving various knowledge assimilation practices, in particular explorative informal noticing and creative experiments, develop strategic knowledge, which is used in an inductive sensemaking generation of a new knowledge structure and strategy content. Below is a summary and overview of the origins and drivers of strategy-creation, and the barriers to it, all aspects which have been discussed in this chapter. These building blocks are used in the next and final chapter to sketch a tentative model of strategy-creation and strategy process – content relationships.

	Adaptive Motor	Creative Motor
Origins		
Outer Context	order	complexity
Inner Context	core knowledge structure	peripheral knowledge structure
Drivers	adaptive learning dynamics	creative learning dynamics
Knowledge-assimilation practices	formal intelligence, routine experience	informal noticing, creative experiments
Sensemaking	deductive	inductive
Barriers	Tied to core knowledge structure	Tied to peripheral knowledge structure
	(e.g. reasoning by analogy, prior-hypothesis bias)	(e.g. overconfidence, wishful thinking)

Table 11.1: Overview of strategy-creation origins, drivers and barriers

Chapter 12

A LEARNING DYNAMICS MODEL OF STRATEGY-CREATION

12.1 Strategy-creation – Summary and Conclusions

12.1.1 Introduction

The findings are summarized and concluded in this final chapter. The concepts and constructs outlined in the preceding chapter are brought together in an alternative perspective on strategy-creation, the relationship between strategy process and strategy content, and adaptive and creative learning dynamics. A tentative model is presented. It is compared with other theories, and some limitations are discussed. Finally, the discussion regarding the alternative approach and tentative model of strategy-creation and strategy process – content relationship continues in a more speculative fashion. Some implications for strategic management theory, the theory of the firm and international management are considered, together with implications for further research and managerial considerations.

12.1.2 A Tentative Model of Strategy-creation and Adaptive and Creative Learning Dynamics

The origins and drivers of strategy-creation, and the barriers to it, were specified in the previous chapter. The concepts and constructs build on and confirm findings in strategy research; in particular, they show the specific character of strategy-creation and provide a foundation for a more comprehensive model of strategy-creation and strategic change. The fundamental character of strategy-creation is consistent with prior general descriptions in strategy-process research. Strategy-creation evolves in an incremental, collective, purposive (Mintzberg, 1978, Mintzberg and Waters, 1985; Quinn, 1980) and enactive (Weick, 1987) process. Moreover, it includes two strategy sub-processes, an adaptive and a creative strategy motor, with different process

characteristics (cf. Burgelman, 1983a, 1983b, 1991). Apart from these findings, more detailed strategy mechanisms in terms of various learning dynamics can be established based on the data in the single in-depth and multiple retrospective studies. *The results essentially specify the organizational learning dynamics involved in more dynamic resource-based (e.g. Teece et al., 1997) and strategy-formation perspectives (e.g. Burgelman, 1983a, 1983b, 1991).* The strategy motors include different learning dynamics involving different knowledge-assimilation practices and so called sensemaking mechanisms. A creative strategy motor involving various knowledge-assimilation practices, in particular exploratory informal noticing and creative experiments, coordinates and combines strategic knowledge. This new combination of strategic knowledge is used, in turn, in the inductive sensemaking generation of a new knowledge structure and new strategy content.

There are various ways in which strategy creation and strategic change can occur. Various strategy process characteristics, and contextual and cognitive factors, can influence strategy content through different mechanisms. Accordingly, different strategy process and strategic-change models have been presented. Below is an alternative approach to strategy-creation and strategic management, which builds on the empirical findings in this study. The model focuses on strategy-creation and the effects of strategy process on strategy content. It includes the findings in this study, which essentially have demonstrated the following:

1. Strategy-creation develops in an *incremental, collective, purposive and enactive* process (in accordance with previous findings in strategy-process research).
2. Strategy-creation is characterized by an *outer context* dominated by *complexity*, an *inner context* involving *two strategy motors*, a *strategy content*, which essentially is a *puzzle* and *strategy process(es)* that include various *learning dynamics*.
3. Strategy-creation is generated via a *peripheral creative strategy motor*, this motor is separate from a *central adaptive strategy motor*, which primarily reproduces and refines historic and present strategy.
4. The creative strategy motor is characterized by a *life-cycle process* and the adaptive strategy motor by a *teleological process*.

5. The strategy motors involve two types of learning dynamics: *adaptive and creative learning dynamics*, which include various *knowledge-assimilation practice*; the motors are related to different sections of an organizational *knowledge structure*.

6. The knowledge-assimilation practices

- involve *different forms of learning*
- generate *different types of knowledge*
- are tied to different parts of the *knowledge structure*
- involve *different barriers* to learning.

7. The knowledge structure

- includes a *core* and a *peripheral* section, each of which involves different *barriers to learning*
- is developed and refined through *inductive* and *deductive sensemaking*, and via knowledge-assimilation practices

8. The adaptive motor

- primarily involves the knowledge-assimilation practices of *formal intelligence and routine experience*
- primarily includes *exploitative learning and knowledge*
- is more closely tied to the *core*, more stable and fixed, section of the knowledge structure
- primarily involves *deductive sensemaking*
- generally includes forms of bias which are linked to the core knowledge structure

9. The creative motor

- primarily includes the knowledge-assimilation practices of *informal noticing and creative experiment*
- primarily involves *exploratory learning and knowledge*
- is more closely tied to the *peripheral*, less stable and fixed, section of the knowledge structure
- primarily involves *inductive sensemaking*
- is better insulated from bias connected to the core knowledge structure, but includes other forms of bias

10. In summary, the *origins* of strategy-creation are in an outer context characterized by complexity and in an inner context characterized by a peripheral knowledge structure. The *drivers* of strategy-creation are primarily the knowledge-assimilation practices of informal noticing and creative experiments. The *barriers* to strategy-creation are primarily tied to the core knowledge structure and the adaptive motor.

The empirical observations indicate that it is possible to represent some components of strategy-creation and strategy process – content relationships, and to provide a tentative model (see Figure 12.1). *Strategy-creation is based on creative learning dynamics, which partly includes an action process in the form of knowledge-*

assimilation practices, and partly a cognitive process involving sensemaking and knowledge structures; the two processes are integrated within the model. The basic complexity of the outer context in strategy-creation implies that regular strategic analysis, planning or other routine organizational mechanisms do not seem entirely appropriate. Instead, more inductive heuristics become applicable, in particular more exploratory knowledge-assimilation practices. These knowledge-assimilation practices generate strategic knowledge and synthesize, via sensemaking, a knowledge structure over time. The outcome of this iterative and recursive process of knowledge assimilation and inductive sensemaking, the construction of a knowledge structure, is strategy content. Strategy content, in turn, will naturally influence the outer strategy context (this relationship, however, the dotted line, has not been specified in this study and is not central to the model). Essentially knowledge-assimilation practices generate strategic knowledge, which in turn determines strategy content.

In brief, the model can be summarized more generally: strategy context (order – complexity) connect to knowledge-assimilation practices (formal intelligence, routine experiences, informal noticing, creative experiments) and knowledge structure (core – peripheral) within the firm; the learning dynamics, including knowledge-assimilation practices and sensemaking (deductive – inductive), deductively reinforce the core knowledge structure or inductively create a new one, and in the end strategy content is determined.

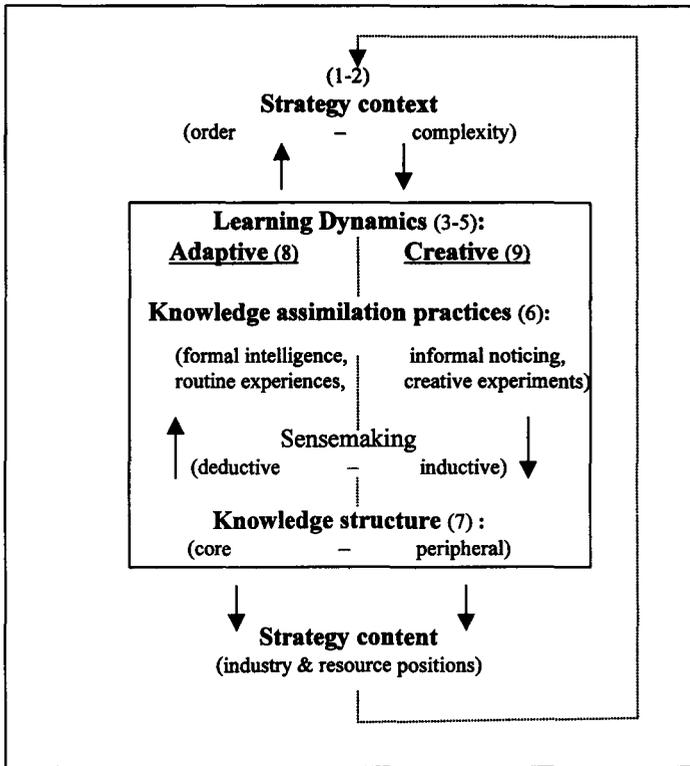


Figure 12.1: A tentative model of strategic learning dynamics and strategy-creation (numbers refer to summary of findings above).

The model determines the strategy process – strategy content relationship and indicates that strategy process and content are interdependent rather than independent topics. *Strategy includes learning dynamics in terms of knowledge-assimilation practices; including action processes focused on development of and learning about strategy; and sensemaking including interpretations of strategy. Both mechanisms reinforce present knowledge structures and, in the end, strategies or create new knowledge structures and strategies.* Strategy content is the final product out of this incremental and iterative strategy process. It is in this sense the retrospective pattern or finalized clarification of the strategy puzzle in strategy-creation.

Essentially two interrelationships and one causal linkage can be discerned in the model. First, there is an interrelationship between the outer context, the origin of complexity or order, and knowledge-assimilation practices and knowledge structure.

Second, there is an interrelationship in terms of sensemaking between knowledge-assimilation practices and knowledge structure. Finally, there is the link between the knowledge-assimilation practices and knowledge structure, and strategy content.

The model indicates that the learning dynamics of knowledge-assimilation practices and inductive and deductive sensemaking in the firm are important variables in the relationship between the strategy context and strategy content. Naturally, it is acknowledged that this is only one possible model of strategy creation and strategy process – content relationship. As discussed in Chapter Eleven the focus is on the relative balance between different knowledge assimilation and sensemaking capabilities in the two strategy motors. The creative motor includes relatively more of explorative knowledge assimilation practices and inductive sensemaking compared to the adaptive motor. It is also important to note that the model primarily focuses on strategy-creation and does not cover strategic change at the corporate level, the final replacement of the prevailing strategy with a new one. That subject is discussed more in detail in Section 12.1.4.

Besides potential strategy-creation explications, the model provides a possible explanation of how strategy context influences strategy process and the organization. However, it needs to be acknowledged that the study primarily has focused on the interrelationship between knowledge assimilation and knowledge structure and the causal link to strategy content. Less emphasis has been put on the interrelationship between strategy context and, knowledge assimilation and knowledge structure. The outer context influences the strategy process and the organization, but it may be enacted and interpreted differently by organizational members and units. Hence, the environment influences the organization and vice versa. It seems reasonable to believe that the centre or the adaptive motor will tend to dismiss complexity that may disturb their central role and, likewise, that peripheral units and creative strategy motors will be more prone to invite complexity.²⁵⁸ In other words, political and power aspects are likely to be of importance in the relationship. Organizational members and units may also inaccurately interpret the nature of the outer context since cognitive barriers

²⁵⁸ This is basically in accordance with Thompsons's (1967) claim that it is not in the interest of those in power to focus on and invite attention to changes that may undermine their own influence. The role of political processes in this relationship has also been examined in strategic management (Johnson, 1987, 1988; Pettigrew, 1985a).

might influence the perception of the environment. Hence, the sequence of interrelationships and causalities in the model may explain why firms often fail to match strategy contexts in strategy-making. If inappropriate learning dynamics and knowledge structures are employed, there will be an imperfect match between strategy context and strategy content.

The political and cognitive aspects regarding the relationship between outer context and strategy process and the organization have as mentioned not been examined in detail in the study. This implies that any conclusions regarding this relationship must be cautioned. In addition, it needs to be recognized that each intermediate variable (learning dynamics, knowledge assimilation practices, sensemaking, knowledge structure) indisputably has many other causes besides those specified in the model. These influences may also cause the match between strategy context and content to fail.

In summary, the study illustrates that it seems possible for strategy to be created and developed through coordination and combination of knowledge in peripheral organizational sections, as described and analyzed above, and not merely through strategy formulation in the centre or solely through the pressure of external selection. It proposes that processes other than those of strategic planning and external pressure can play an important role in strategy-creation and change. Hence, it might be suggested that creative learning dynamics - apart from adaptive learning dynamics related to strategic planning - influence strategy content especially under complexity. This does not at all exclude the role of strategic planning in strategy-making, but merely suggests that other mechanisms might be involved as well.

The important conclusion is that the inherent learning dynamics of the creative and adaptive strategy motors generate different types of strategic knowledge and, in the end, different strategy content. Hence, the general hypothesis is that strategy-making in the firm includes two fundamentally different strategy logics. Besides the traditional *adaptive logic* of the centre, characterized by analysis and planning, it is suggested that a more experimental *creative logic* in the periphery is of importance as well. As stressed earlier and in Chapter Eleven it must be observed that it is a question of relative balance between adaptive and creative knowledge assimilation and sensemaking capabilities in the two strategy motors.

The model is primarily concerned with strategy-creation and its characteristics in terms of how strategy is generated. It is important to observe that the model focuses on the internal strategy-making process and not primarily on the general relationship between environments and organizations.²⁵⁹ The results presented are far from conclusive and merely suggest an alternative explanation of strategy-creation. It is an incomplete exploration and examination of the strategy-creation phenomenon and strategy process – content relationship and the subject clearly needs to be investigated further. Some limitations of the study are discussed in Section 12.3 and future research aspects in Section 12.4.

It might be argued that the model presented here is overly complex compared to models of competitive pressure, selection, etc. At the same time, it seems necessary in order to take the basic circumstances in strategy-creation and the strategy process – content relationship into consideration. It is clear that strategy-creation involves many complex ingredients such as diverse forms of learning dynamics, the change of cognitive structures, inductive methods for resolving complexity, interaction between internal and external actors, etc. The perfectly competitive and the selection models in economics-based theories and the environmental-selection and external pressure models in organizational-change theories might be less complicated. However, the point of departure here is explaining strategy making and not only making predictions. There is a trade-off between theoretical simplicity and assumptions required by theory, as Simon (1979, p. 495) has put it: "Occam's Razor has a double edge", since more simple or parsimonious theories (e.g. profit maximization, selection) often have to make more categorical assumptions regarding the human cognitive system. It is clear that the resolution of realism versus parsimony involves trade-offs and "...different fields and different theorists make those trade-offs differently" (Pfeffer, 1997, p. 43). This study and the model presented above have emphasized realism at the cost of simplicity. On the other hand, the model does include assumptions about cognitive systems, in order to make it more simple. It was assumed that there are certain forms of organizational-level learning and cognition. Some might actually argue that this makes the model overly simplistic.

²⁵⁹ This is in contrast to many theories of organizational change which focus mostly on the specific relationship between the environment and the organization and, in some instances, final organizational

12.1.3 The Different Roles of the Adaptive and Creative Motors

In a strategy-creation setting, the outer context is complex, the primary learning dynamics in terms of knowledge-assimilation practices are exploratory informal noticing and creative experiments together with inductive sensemaking, and the peripheral knowledge structure is involved. The fundamental strategy questions of *where to go* and *how to get there* are essentially integrated in strategy-creation. Strategy-creation thus addresses the composite question "*how to get where to go*". It implies that the focus is not merely on *where to go* in terms of identifying market positions or formulation of plans, or on *how to get there* in terms of locating resource positions or the formation of strategies. It is rather on *how to get the plan and/or formation process leading to where to go in terms of a certain market and/or resource position. That is, strategy-creation and the model are focused on specific processes that develop strategy. The emphasis is on the usage of various learning dynamics in order to find out and shape strategy. Knowledge-assimilation practices in strategy process provide indications and cues that guide new attributions and actions into new resource and industry arrangements.* Both strategy motors are of importance in strategic management, but the creative one dominates in strategy-creation. Strategy content grows out of this process in terms of *where to go*, new industry positions, and in terms of *how to get there*, new resource arrangements, and can only be fully pictured retrospectively in strategy-creation. In brief, the model includes the fundamental questions of strategy (*where to go* and *how to get there*) in both strategy content and strategy process.

The two fundamental strategy questions regarding both strategy process and content are more separable in an adaptive strategy process than in strategy-creation. In an ordered strategy context the essential knowledge-assimilation practices are formal intelligence and routine experience, and the actions and observations are tied to the core knowledge structure. In this setting the questions of *where to go*, strategy formulation, and *how to get there*, strategy formation, are more easily separated. Likewise, strategy content is more possible to discern at an earlier stage, rather than

forms and in contrast to many strategic change perspectives that focus on industry-level change.

only retrospectively. Hence, industry positions in terms of *where to go* and resource positions in terms of *how to get there* can more easily be depicted *ex ante*. These observations explain some of the confusion and contradiction in the four strategic management areas discussed in this study (industry positioning, resource positioning, strategy formulation, strategy formation). The dominating fields of strategy content and strategy formulation have essentially focused solely on an *adaptive strategy logic*, which explains the omission of strategy-creation from their research agendas.

The fact that strategy-creation emanated from creative motors and was initially neglected and rejected by adaptive motors does not indicate that the adaptive motors are deficient or unimportant for strategy. On the contrary, an alternative explanation could be that *the two motors, including different learning dynamics and knowledge structures, play different roles at different times and for different purposes in strategy-making. The adaptive motor has an important role in refining and upgrading prevailing strategies. The creative motor, on the other hand, creates and develops entirely new strategies.* Both involve learning barriers and distortions that hinder, but also promote, the development of strategy. Whether it is one or the other seems only to be fully discernible in retrospect. Hence, it might be possible only after the fact to understand fully how the properties of the adaptive motor that resisted the new strategy were deficient, and how those of the creative motor that generated the new strategy were superior. In this context it is important to observe that both motors are needed and that the creative one is not necessarily superior. After all, most new ideas are bad ideas, as March (1994, p.238) has pointed out, and with the advance of creative strategy motors at the expense and to the exclusion of adaptive ones, there is the risk of paying for the development of the creative motors without gaining any of their benefits. As with exploration and exploitation more generally, both motors are susceptible to traps (March, 1991, 1994). Creative strategy motors might fail; exploration often leads to failure and failure usually leads to exploration: "...a decision maker can be trapped in a cycle of exploration..." (March, 1994, p.239). The adaptive strategy motors also risk being trapped. As observed in Chapter Eight and Eleven, industry-, resource- and customer-embedded paths to strategy all involve path dependency and a potential danger of being locked in by industry or market myopia

(Levitt, 1960), resource or core competence rigidities (Leonard-Barton, 1992) and customer dependence (Christensen, 1997).

The model predicts that in a strategy context characterized by complexity creative learning dynamics and inductive sensemaking are likely to be more applicable than adaptive learning dynamics. In a strategy context characterized by order, on the other hand, it seems as if adaptive learning dynamics and deductive sensemaking would be more applicable. It is important to note, however, that the model essentially is independent of whether order or complexity can be objectively observed by the organization or members of the organization, or whether it is socially constructed. For example, if the organization perceives complexity although (objectively) there is order, it may use creative learning dynamics in a situation where these will not be appropriate, and strategy-creation would seem unlikely to result. The use of adaptive learning dynamics in the same situation, on the other hand, would refine and develop the current strategy, but not promote strategy-creation. Thus, the use of learning dynamics in the inappropriate context might be harmful. *An extensive use of adaptive learning dynamics to the exclusion of creative ones in an outer context dominated by complexity risks locking the firm even further into the prevailing strategy, and the reverse situation, using creative learning dynamics at the expense of adaptive ones in an outer context dominated by order may only generate further costs rather than new strategies.*

It could be questioned whether there is any "out there" at all for the learning dynamics and knowledge-assimilation practices to connect to. Consequently, it might be argued that the outer context is altogether socially constructed. However, the position in this study, as discussed in Chapter Three, is that there is an "out there," even if organizations and individuals can enact and interpret it differently (as in the adaptive and creative motors). The tentative model does not imply that firms will use appropriate learning dynamics given the outer context. On the contrary, it provides a potential explanation for the imperfect match between strategy context and strategy content. The implication in normative terms, which will be discussed in more detail later, suggests the usage of a *multiple set of learning dynamics* - both adaptive learning dynamics in order to develop and refine existing strategies, and creative learning dynamics in order to create new ones. Since it might not be possible

objectively to determine whether or where there is order or complexity, both types of learning dynamics will have to be used. The use of multiple learning dynamics and knowledge-assimilation practices indicates that at least some of them may be able to connect and relate to the relevant strategy context. A usable metaphor might be one of fisherman who uses a range of different tools and baits (i.e. learning dynamics and knowledge-assimilation practices) for different kinds of fish (i.e. order or complexity) without seeing whether there are any fish in the sea at all, and if so, where they are (i.e. outer context) and what kind of fish they are.

12.1.4 Final Strategic Change: the Connection between the Adaptive and Creative Motors

This study has explored strategy-creation, but it has not primarily been concerned with the final strategic change in itself. However, as indicated in Chapter One, these are far from independent subjects. It was discussed in Chapter Ten and Eleven that a third strategy process, a *friction process*, finally triggered strategic change. It seems as if tension is of importance in developing new strategic directions. Others have emphasized the role of tension in creating growth and change (Crossan et al., 1999; Normann, 1976; Pascal, 1990; Pettigrew, 1985a), but Crossan et al. (1999) note that several organizational learning perspectives have neglected it.

Although strategic and corporate change is not the primary focus of the study and not specified in detail by the empirical findings, it is possible to sketch some of its characteristics. Strategy is created in the creative motor through *first-order creative learning*. The adaptive motor resists the new strategy based on its adaptive learning dynamics, resulting in friction and confrontation with the creative motor. Over time the adaptive motor adjusts its view of the strategy in confrontation with the creative motor. A *dialectic process of friction* between the two motors finally leads to *second-order learning* in the adaptive motor and subsequent strategic and corporate change. In a sense the adaptive motor basically then implements (in strategic planning terms, as discussed in Chapter Eleven) via *first order adaptive learning*, what was created/formulated in the creative motor.

In summary, the creative motor develops the strategy ("strategy formulation"). It is confronted with the prevailing strategy in the adaptive motor via a friction process ("strategy evaluation"). The adaptive strategy motor slowly adjusts its view of the prevailing strategy and strategic puzzle (the core knowledge structure dissolves), and finally the strategy is changed quite radically ("strategy implementation") altogether (antithesis) or in part (synthesis).

It seems as if strategic change, the official replacement of the prevailing strategy by the new one, is revolutionary. However, its creation in the creative motor and its recognition and acceptance in the adaptive motor is more evolutionary. Figure 12.2 provides an overview of the strategic change process and the friction between the two motors and dominant learning types.

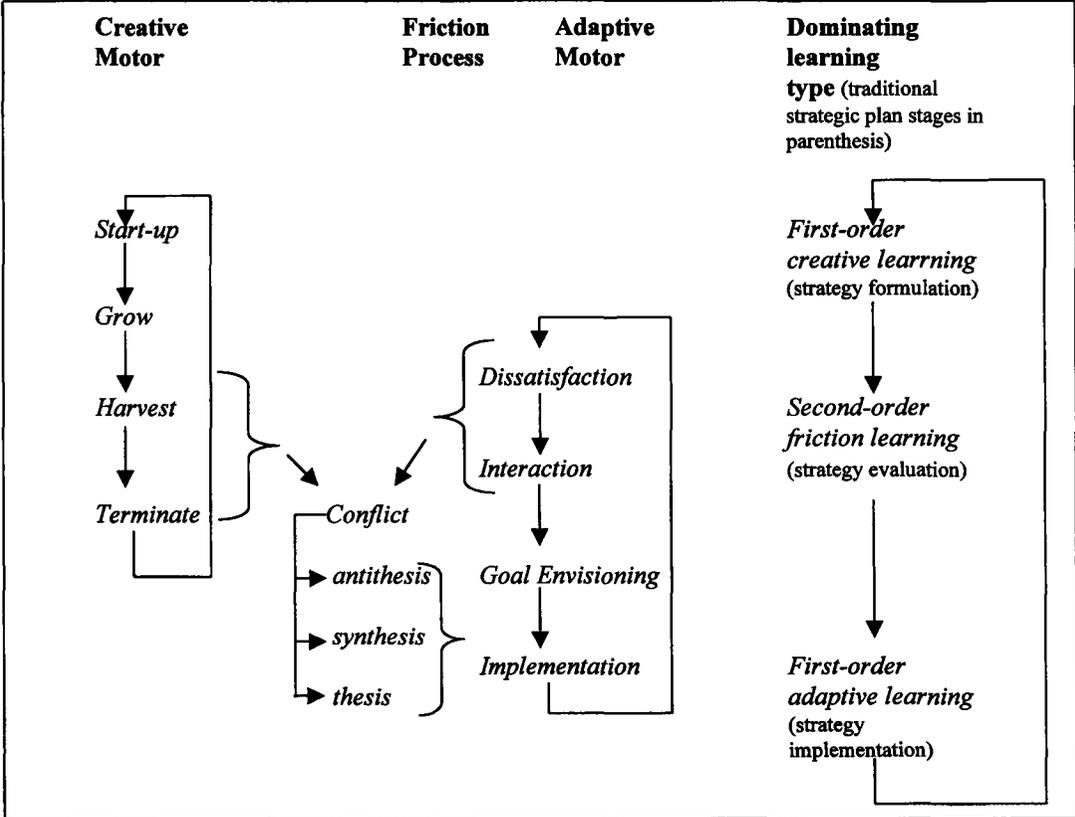


Figure 12.2: Conflict between the creative and adaptive strategy motors in a friction process and dominant types of learning in different stages.

12.2 The Alternative Model and Strategic Management Perspectives

12.2.1 Strategy Process

It is easy to distinguish the model from strategy-formulation perspectives (Andrews, 1980a, 1980b; Ansoff, 1965; Porter, 1980), in which well defined alternatives are set up and deliberate choices made. In contrast to strategy-formulation views, strategy process is taken into consideration in the model provided here, where continuous feedback between formulation and implementation is essential for learning. *The empirical findings showed that organizational learning and sensemaking over time were of crucial importance in strategy-creation.*

The focus on strategy purpose and content and on how strategic change comes about distinguishes the model from many other theories of strategic change and particularly organizational change. Many organizational-change perspectives focus on some relationship between the environment and the organization in terms of adaptation, such as contingency theory (Lawrence and Lorsch, 1967; Galbraith, 1974), population ecology (Hannan and Freeman, 1977) and institutional theory (Meyer and Rowan, 1977; Scott and Meyer, 1983). However, there is little explanation regarding how change actually takes place within the organization.²⁶⁰ This, might be due to the fact that organization views most often have been focused on the *use* rather than the *acquisition* of information (Hedberg, 1981). *Strategy, on the other hand, is by definition focused on how to position the firm in relation to its environment; consequently, information acquisition and knowledge assimilation become crucial as depicted in the tentative model.*

The focus in the model is on the creation of strategy content and strategy positions, rather than mere adaptation to external forces. In this way the perspective has much in common with strategic contingency or neo-contingency views (Child, 1972; Miles and Snow, 1978) and resource-dependence theory (Pfeffer, 1978, Pfeffer and Salancik, 1978). The emphasis in the perspective presented is on the strategic and managerial link between the organization and its environment. In fact it could be understood as a variation of the resource-dependence theory (Pfeffer and Salancik,

²⁶⁰ Once again, however, it is important to note that these theories are primarily focused on organization-environment relationships and not primarily on strategic management. However, they are frequently used as a foundation in strategic management descriptions and evaluations.

1978) in the sense that power and control in the long run will go to the organizational sections with appropriate learning dynamics and knowledge-assimilation practices.

It is more difficult to separate the model from the general description of strategy as incrementally crafted and adapted as in purposive strategy-formation perspectives. As in those perspectives, the model portrays strategy as an emergent process, constituting a dynamic link between the organization and the environment (Mintzberg and Waters, 1985; Quinn, 1980, Stymne, 1974). It is important to note, however, that top management play a more important role in some of these perspectives. Quinn (1980), for example, gives top management a dominant and more rational role. In addition, the incremental character of strategy in several of the perspectives primarily relates to strategy implementation and problems of implementation and not to the creation of strategy *per se*. Another difference compared to the purposive strategy views is the fact that strategy content is synthesized into the tentative model. *The focus is on specifying learning dynamics, knowledge-assimilation practices and sensemaking aimed at forming strategy positions and content.* Assimilation of new information through knowledge assimilation and sensemaking is not separated from its use and strategy content. Hence, strategy content plays an integrative part in the strategy process. On the other hand, several political and cultural aspects included in some strategy formation models (e.g. Johnson, 1987, 1988, Pettigrew, 1985a, 1987a) are not covered in the tentative model.

Strategy-formation views are developed by the model in another way as well. The distinction between the diverse strategy motors provides an explanation for the heated debate in strategy-process research between revolutionary (e.g. Miller and Friesen, 1984, Mintzberg and Waters 1985; Mintzberg 1978; Pettigrew, 1985a, 1987a) and evolutionary (e.g. Quinn, 1980) change. The strategic aim is changed at the outset in the creative motor, but only after the adaptive motor has incrementally changed its view (dissolved the core knowledge structure) and strategic aim does the company itself exhibit rapid strategic change through a friction process. Hence, the emergent change of strategy process outlined by Mintzberg (1978) and others is displayed in the creative motor; the incremental strategic change described by Quinn (1980) resides in the adaptive motor, while the revolutionary change (e.g. Miller and Friesen, 1984, Mintzberg and Waters 1985; Mintzberg 1978; Pettigrew, 1985a, 1987a) is reflected by

the outcome of the friction between the two strategy motors, in the friction process. Mintzberg's (1990b, p. 185) remark: "Strategists learn incrementally and then oversee strategic change in a revolutionary fashion," could be restated in the framework presented here: *strategists in the creative motor learn in an emergent way, while strategists in the adaptive motor learn incrementally from the creative motor and oversee strategic change in a revolutionary fashion through the friction process.*

The classification of strategy process into two separate strategy motors, adaptive and creative, distinguishes the approach here from many others in strategy-process research. Strategy processes, both in terms of strategy formulation and formation, have mostly been conceived in terms of a single process.²⁶¹ The observation of two different strategy processes in the form of strategy motors resembles the division into induced and autonomous strategies provided by Burgelman (1983a, 1983b, 1991) as discussed earlier. His model could perhaps be considered as a special case of strategy-creation and strategy-making involving complex foresight horizons, in which strategy is focused on internal corporate venturing. However, it is not entirely clear how strategy-creation and change actually do occur in this view, except through selection, which is somewhat indeterminate since it basically stresses survival of those strategies that survive. Organizational learning are involved, but it is not completely clear how they and cognitive mechanisms works in the generation of strategy.

The emphasis in the model presented here is specifically on organizational learning mechanisms and not on selection mechanisms. It might also be questioned more generally whether evolution is an appropriate analogy, since speed is an important factor to consider in the choice of dynamic processes to describe strategic management; as discussed in Chapter Eleven, ecological processes appear to be slower. In strategic management practice and economic competition, the environment changes rapidly, or as Elster (1989) has put it: "Selection has a *moving target*." Selection also seems to exclude the importance of problem-solving, creativity and intention in strategic management, all aspects that rather appear to be at its core. *The alternative perspective displayed here includes a specification of learning mechanisms and includes important features of*

²⁶¹ Quinn (1980) has distinguished a range of various subsystems of strategy in his empirical investigations of strategic change, but they relate to different aspects of strategy rather than different processes regarding the creation of a single strategy. Configurational approaches (Mintzberg, 1989; Miller

intention, creativity and problem-solving, and it seems particularly appropriate in an environment that moves and changes. In sum, the tentative strategy-creation model specifies how strategy-creation occurs and the mechanisms that are involved. It seeks to go beyond merely describing strategy processes and sketching how process, contextual and cognitive factors influence strategy-creation and change. Furthermore, it specifies the content and process relationship more generally in terms of organizational learning dynamics.

12.2.2 Strategy Content

The content perspectives primarily emphasize strategic considerations given that a certain business focus already has been determined. In traditional strategy-related IO perspectives (Porter, 1980) the industry is more or less given and in more static RBVs (Barney, 1991) the resource focus is, similarly, given. These views essentially concern strategy exploitation once strategies have been created. *However, the exploitation of industry and resource positions and strategic choices in terms of them appear to present themselves only after a process of strategy-creation that includes different kinds of learning dynamics, knowledge-assimilation practices and sensemaking.*

It might be suggested that the strategy-content approach is of relevance when a strategic choice has been specified in the adaptive motor. However, this stage is not reached until after years of strategy-creation in the creative motor and after years of adaptation and adjustment of the knowledge structure in the adaptive motor. Only then can the new strategy be understood and conceptualized as a strategic decision. It must, nevertheless, also be recognized that some resource perspectives do consider the strategy-development process, and more dynamic RBVs clearly emphasize strategy-creation. It was argued earlier that the view provided here could be considered as a contribution in that tradition.

Knowledge-assimilation practices, or learning capabilities, have the potential to create new strategies. These capabilities involve knowledge transformation and transfer in managerial and organizational processes (Amit and Schoemaker, 1993;

and Friesen, 1984) also involve several processes, but over time in separate epochs or stages, not several processes during the same time frame.

Teece, Pisano and Schuen, 1997). Learning is one of the organizational processes defining the firm's dynamic capabilities and competitive advantage in the dynamic capability approach (Teece et al., 1997). The learning capabilities displayed by the companies in this study all had strategic capabilities to "...integrate, build, and reconfigure internal and external competences..." and constitute one of the "dynamic capabilities" in Teece et al.'s (1997, p.516) perspective. The learning dynamics and knowledge-assimilation practices could be classified as a specific strategic capability in the firm. It is also an important ingredient in interorganizational processes contributing to competitive advantage (cf. Dyer and Singh, 1998, Oliver, 1990, 1997).

It is recognized that the discussion of the tentative strategy-creation and strategy process - content model is far from exhaustive with respect either to prior theory or to causalities. There is obviously a need to specify its connection to models of organizational change, strategy content and strategy process and to specify the relationships in the model more generally. *In conclusion, the model provided has most in common with purposive and dynamic strategy-formation views in terms of strategy process, and with more dynamic RBVs among theories of strategy content, in particular the dynamic capability approach (Teece et al., 1997).* An important difference compared to the dynamic capabilities approach, however, is the emphasis of the model on behaviorism rather than economics. An accompanying notion is that managers are not necessarily rational.²⁶² In fact one of the more important conclusions in the study is that "irrational" processes might generate rational strategic outcomes. This issue is discussed in Section 12.4. Next is a discussion of the limitations of the present study.

12.3 Limitations

The investigation of strategy-creation presented in this study has several limitations and clearly provides an incomplete exploration and examination of the subject. First, given the limitation of the empirical data to four organizations, the usual caution in making any generalizations is clearly recommended. It might be suggested that the cases studied are extreme in that the adaptive motors actively resisted strategy-

²⁶² Essentially managers are assumed to be rational according to the dynamic capabilities perspective as in resource-based perspectives (Teece et al., 1997, table 1, p. 527).

creation and the companies did not primarily seem to build strategies on prevailing industry and resource positions. If so, any generalization must of course be treated with caution.

However, an examination of extremes can provide as fruitful knowledge as a study of the average organization. Indeed, scholars in the field of strategy encourage research on outliers and polar types of strategy and organizations (Daft and Lewin, 1990; Pettigrew, 1990). It is not obvious that a traditional study of the average and most frequent types of strategy processes, with generalization about behaviours around the mean, will be most informative.

On the other hand, it might be suggested that the properties of the strategy-creation processes examined here are actually more common than many might think. There are some anecdotal indications that the development of strategy in several other instances might have a similar character. Two parallel cases were mentioned in the introduction to the study: the development of the powerful anti-ulcer drug Losec by Astra (Johansson and Vahlne, 1992; Sölvell and Vahlne, 1995; Östholm, 1996) was one of them. Losec was developed by a peripheral section of Astra against the will of corporate management, which was skeptical and finally terminated the ulcer-treatment project officially. However, the project was carried on anyway, and Losec became the most selling drug in the world. The global success of the mobile telephone and terminal business²⁶³ at Ericsson was another example (Meurling and Jeans, 1997a/b). According to several sources it was close to being divested, but was kept after years of internal discussions and evaluations. The business did not grow out of specific industry positioning; rather, Ericsson formed the industry. Further, the company had little specific or distinctive resources and capabilities in telephone receivers or electronics and consumer goods, apart from the experience with military radiotelephony.

The impressive achievements by Absolut Vodka (Hamilton, 1994) illustrate another case where factors peripheral to and outside the company's traditional industry and resource spheres played a crucial role in the creation of the strategy. In this instance too, strategy-creation included internal friction and tensions between alternative strategic aims. Another Swedish example is the overwhelming success of

²⁶³ Not mobile systems, which was the primary target of investigation in this study.

the innovative Skandia Assurance and Financial Services (AFS), a US subsidiary of Skandia active in the unit-link insurance industry (Bartlett, 1996). In this case peripheral initiatives, the opening up of new markets and entirely new capabilities of coordinating and combining resources were essential.

The often cited story of 3M's Post-It Notepads is also similar to the cases in this study, with internal skepticism, industry and market resistance and an initial lack of resources and capabilities (Ketteringham and Nayak, 1987; Peters, 1983). Many pharmaceutical innovations (e.g. the Tagamet drug by SmithKline Beecham, Ketteringham and Nayak, 1987) and other product innovations seem to involve these features as well (e.g. the CT Scanner developed by EMI, Ketteringham and Nayak, 1987; Teece, 1987; Spender, 1996).

One complication in terms of generality concerns the relevance to different types of strategic management change. Apart from pure technology, and product and service innovations, it appears as if the strategy-creation characteristics outlined might apply more generally to the creation of new strategies, including new markets and market segments, customers and organizational forms. The question is whether it is applicable to a wider range of phenomena relating to strategic change, aside from strategy innovation and creation, since the study focuses primarily on strategy with complex foresight horizons and on strategy-creation. Although the perspective and tentative model seek to include adaptive forms of strategy-making, the study has relied on a small number of cases of strategy-creation and has explored other forms of strategic management very little. Still, the model focuses on strategy process – content relationships in general and could perhaps be relevant for a broader range of strategic management and not merely strategy-creation.

The emphasis here has been on strategy-creation, but if more traditional strategy-making within the spheres of prevailing industries and resources were to be investigated, the presented model might still be applicable. In those cases adaptive learning dynamics play the pivotal role, and traditional explanations in strategic management theory appear to have more relevance, as outlined above. On the other hand, as soon as the outer context becomes complex, other theories such as dynamic RBVs, strategy-formation theories and creative learning dynamics seem to be more applicable. However, even if the results reveal important phenomena that might be

valid for different forms of strategic management and organizations, any generalizations outside the context of strategy-creation have to be treated with caution given the limited empirical data

Another limitation of the study might be the exclusion of smaller firms and projects, and entrepreneurial individuals. It is focused on large complex organizations, MNCs. It might be suggested that in smaller organizations there is no sharp distinction between adaptive and creative motors and learning dynamics. For example, it is likely that small entrepreneurial firms will primarily involve creative learning dynamics. It could also be argued that creative motors might predominate in larger firms that are managed by individual entrepreneurs (e.g. IKEA, Virgin). In both cases, small firms and large ones dominated by individual entrepreneurs, the creative motor is likely to be more permanently in the center rather than in the periphery.

A possible explanation in terms of the model might be that once the creative motor is acknowledged by the adaptive motor, it becomes an adaptive one, and that in an entrepreneurial firm a new creative motor is started immediately thereafter. Hence, creative motors arise more readily and continuously in small and entrepreneurial firms. This was the case at ERA. Once the creative mobile systems motor had become more accepted and strategy had changed, it turned into a more adaptive motor at Ericsson. However, SRA/ERA had started another, related creative motor, the mobile terminals and telephone business. It was deliberately located in Lund in the south of Sweden in order to be protected from corporate management and in particular from the new adaptive motor, mobile systems.²⁶⁴

It should also be recognized that rather small firms (e.g. SRA/ERA in Ericsson) and projects (the Eastern Europe project at AGA) were included in the present study, but as parts of larger MNCs. Generally, however, the role of individual entrepreneurs has not been emphasized in the study. It could be argued that Åke Lundqvist of Ericsson (President SRA/ERA), Jörgen Johnsson (President Nicorette, Consumer Pharma, Consumer Healthcare) at Pharmacia & Upjohn, Lars Timmer (Eastern European Coordinator) at AGA and Carl Johansson (President Scanmeck Couplet) and Leif Svensson (President and CEO Couplet) at Couplet were the individuals that determined the strategies. However, this statement is not necessarily

²⁶⁴ According to Åke Lundqvist, former President of SRA/ERA.

in conflict with the perspective and the model, since these focus on organizational-level learning dynamics and cognition, including entrepreneurs' and the organization that they shape and influence.

It might be suggested that entrepreneurs convey their kinds of learning dynamics, sensemaking and cognitive structures to others. They influence the social interaction and transmission of knowledge between individuals. This possibility was, however, not examined in the study, and it should be acknowledged that generally small individual firms, as well as large firms that follow an entrepreneurial track dominated by individual entrepreneurs, are poorly covered by the perspective and tentative model presented here.

The sole focus on Swedish MNCs is another problem. It may be argued that Swedish companies in general use more informal mechanisms and personalized managerial styles and administrative practices (Hedlund and Åman, 1984; Zander, 1997), thus allowing for more peripheral initiatives as compared to MNCs originating in other countries. There is, however, evidence to suggest that there has been a gradual retreat from informal management styles in Swedish MNCs (Hedlund and Åman, 1984) and, in addition, that initiatives by peripheral units, at least in terms of MNC subsidiaries, are prevalent in MNCs of other nationalities as well (Birkinshaw, 1995, 1997; Birkinshaw and Fry, 1998).

As in many studies of strategy development and organizational change, this study is limited in that it examined only strategies that actually were implemented and were successful to a certain degree. It could be argued that if other, discarded or less successful strategic issues had been examined the results would have differed. Population ecology has taught us the importance of not making a selection on the basis of the dependent variable. On the whole, however, the major focus has not been on relating particular strategy processes or organizational-learning characteristics to performance, but rather to examine the fundamental features of strategy-creation, the strategy process – content relationship and the details of learning dynamics in strategy-creation. The findings essentially leave open the question whether the particular characteristics observed in this study imply better performance.

On the contrary, it can be suggested that creative learning dynamics promoting successful strategies have characteristics similar to those of strategies that are rejected

or that lead to disaster. Likewise, adaptive learning dynamics, which lead to strategic simplicity and a narrow industry definition, dependence on a particular set of weak customers or a limited range of competencies, may well resemble those involved in refining and developing a successful strategy based on a superior industry or resource position. However, the focus in this study has been on strategy-creation processes that actually have occurred and not on failed strategic attempts or on the process of ruling out certain strategies, or NIH syndromes; thus. The applicability of the study is clearly limited as regards these other kinds of circumstances.

There is another methodological problem related to the focus on successfully implemented strategies. As some years had passed since the strategies were initiated there was a risk that some managers had left the companies and that the recollections of those interviewed might have become distorted. This clearly challenges the findings. One way to counter this problem was to include the single in-depth study, which was an on-line participant observation investigation initially, and to include strategy processes that were in different stages. AGA was still in the midst of their Eastern Europe entry and Pharmacia & Upjohn was at the end of a corporate acceptance of the strategy in question. In addition, formerly employed managers were interviewed and a variety of sources were used, some of which were based on interviews made in the midst of the strategy processes. It is important to note, however, that strategies were deliberately chosen in order not to be too recent with the purpose to avoid problems of sensitivity. Hence, the fact that the managers were not in the middle of the strategies was partly an advantage since they were able to speak more freely about them. In brief, there was an effort to balance between different advantages and disadvantages as regards the focus on already implemented strategies. However, generally the findings and results have to be cautioned given that they are based on interviews with managers regarding strategy events which took place some years back.

A question that has been discussed throughout the study is whether there is such a thing as organizational-level learning and cognitive frameworks as contrasted with individual learning and cognitive schemas. Based on prior studies and writings, it was assumed to be reasonable that this was the case, and the study focused on

examining the particular processes involved in organizational learning and how organizational frameworks develop.

Although the study reveals important characteristics of strategy-creation and suggests a few fundamentals for understanding strategy-creation and learning dynamics, it must be recognized that they rest on the assumption that there are group or organizational level learning and interpretations of strategy of some kind. As discussed earlier, this assumption is far from self-evident, even if several strategy, business and economics scholars take this view. The primary focus in this study has not been to examine the substance of this assumption, and the knowledge structures and sensemaking processes have not been examined in detail. However, the study seems to confirm that there are individual ways of learning and views of strategy that can be clustered together. Hence, some individuals and sections of firm appear to have more similar ways of strategic learning and interpretations of strategy than others. Even if these ways are far from exactly the same and substantial differences remain between individuals, they still appear to converge on fundamental principles and parameters.

Concurrently, however, this study shows that there can be different knowledge and sensemaking processes within the same firm and that their coexistence might even be a precondition for survival. It must be re-emphasized, however, that the primary focus of the study was not on investigating the *existence* of group and organizational knowledge structures, sensemaking and learning; accordingly, any conclusions must be drawn with caution and are more speculative in nature. Thus, the findings regarding knowledge structures and sensemaking mechanisms must be regarded upon as reasonable interpretations rather than definite conclusions.

Finally, there are clear problems in making reliable causal inferences in a model of strategy-creation and process – content relationships. In contrast to the tentative model presented above, it might be suggested that a certain new strategy content requires the organization to use particular creative learning dynamics; that is, if the organization or a section of the organization decides on an entirely new strategy content, this implies a certain strategy process (e.g. creative learning dynamics). Basically, the causal direction is thus reversed. This interrelationship is, however, at least partly considered in the model in terms of the sensemaking link between

knowledge assimilation and knowledge structure. Even if there is a sense or idea concerning a particular strategy content, it needs to be developed in terms of learning dynamics and knowledge-assimilation practices, and to be formed and specified in terms of a certain view, a knowledge structure. It is also in fact indicated in the model that strategy content is related to the outer strategy context and to learning dynamics (the dotted line).

The principal challenges regarding causal inference in qualitative case studies were discussed in Chapter Three. In particular there is an apparent challenge in trying to make conclusions regarding organizational learning, since learning is involved in an ecology of different learning levels and, in turn, embedded in other organizational procedures and routines. Thus, any directions of causation have to be considered with caution. It does not seem possible to establish an unambiguous causal relationship in regard to strategy-creation and strategy process and content. *However, based on the findings, it seems reasonable to believe that the outer context have some connection with learning dynamics; and that learning dynamics in interaction with knowledge structures in the end influence strategy content. And it seems reasonable to believe that in general there is a higher likelihood that creative learning dynamics and knowledge-assimilation practices and a peripheral knowledge structure would be associated with and lead to strategy-creation, compared to adaptive learning dynamics and knowledge-assimilation practices and a core knowledge structure.*

It is important, however, to re-emphasize that interrelationships are involved. This characteristic of dynamic strategy process models and process models in general has been stressed by scholars in the field (e.g. Pettigrew, 1990; van de Ven and Poole, 1995): "As Koput (1992) stated, a dynamic model is one where the variables...at a given time are a function (at least in part) of the same variables at an earlier time" (van de Ven and Poole, 1995, p. 536).

12.4 Speculative Comments and Future Research

Various implications for strategic management and related theories are discussed in a more conjectural fashion in this section. It builds on the findings and conclusions in

the study, but takes a step further, speculating on potential implications for theory and indicating possible directions of future research.

12.4.1 Multiple Learning Dynamics and Strategy Making in the Periphery

A central tenet growing out of the study is that various types of learning dynamics may be required for different strategy contexts and that different inner contexts provide a foundation for different types of learning. This is in accordance with studies of innovation projects, laboratory experimentation and the employment of machinery in different settings (Pisano, 1994, Von Hippel, 1993, Tyre and von Hippel, 1997), as Pisano suggests "...there is no best way to learn, but that different approaches may be required in different knowledge environments" (1994, p.85). This could perhaps be evaluated more closely on an experimental basis within the IT and internet sectors for strategy. Since these are fast moving and growing industries and different approaches to similar strategic problems appear to be common, different characters of strategic learning could be examined and compared reasonable fast. Similarly, differences in internal and external contexts and their influence on strategic learning might be possible to evaluate in such a setting. Conceivably, more precise methods in terms of psychology and anthropology and suitable methods from other research traditions, as suggested and used by Hodgkinson and Johnson (1994), could be employed in such a research endeavor.

It has previously been established that strategy-creation involved probing of the outer context and environment by the creative motors and that knowledge assimilation and acquisition of external knowledge were of vital importance. *It might be suggested that entirely new strategies are formed in peripheral organizational sections precisely because these sections are more isolated from the inner parts of the firm (and the core knowledge structure) and thus closer to the outer context and the relevant strategic knowledge* (Regnér, 2000, forthcoming). Accordingly, it might also be suggested that entirely new strategies appear in peripheral sections because their isolation makes them difficult to control and influence, so that they can include different learning dynamics and peripheral knowledge structures. When the centre is able to exercise control and to impose adaptive learning dynamics, core knowledge

structures and prevailing strategies will reign. Perhaps the fact that the peripheral creative strategy motors were not allowed to participate in strategy formulation within the adaptive motors, and did not seem to want to, is a prerequisite for their success.

It might also be suggested that with increased environmental turbulence and hyper-competition, including intensified technological and competitive change, more strategic knowledge will need to be located near the periphery of organizations. This could also explain why subsidiary initiatives seem to play growing role in reorienting and renewing MNCs (Birkinshaw, 1995, 1997; Birkinshaw and Fry, 1998).

One interesting research question in this context is whether a peripheral strategy motor can intentionally be initiated by adaptive motors, or whether the mere influence of the latter implies that it becomes a motor within the adaptive sphere. The sharp differences in learning dynamics and knowledge structures and the importance of tension and friction between the two motors seem to cast doubt on the possibility that adaptive motors could deliberately initiate creative ones.

A related arena for further research concerns the strategic role of organizational centres in general. If organizational centers are too far from strategic knowledge and unable to influence strategy-creation, the investigation of their strategic role in strategy creation, if they have one, and what that role might be, provides some questions to be researched. Other interesting research questions are raised by the increased role of peripheral organizational sections in situations of increased environmental turbulence.

12.4.2 "Irrational" Processes and Rational Outcomes

One interesting question is what strategy motor was in fact decisive for the new strategies. The question is appropriate, since the new strategies were discovered and created by the creative motors, but the adaptive motors finally recognized them and actually made the strategic change. It should be recognized that actors in the adaptive motors after all did not stop the strategy-creation processes. At the time of strategy-creation, however, there did not seem to be any abundance of farsighted insights in the adaptive motors. It appears as if the final recognition of the strategies was more a product of retrospective reframing: "The one small flaw is that strategists take credit for their foresight when they are actually trading on their hindsight" (Weick, 1995, p. 78).

The opposite conclusion would be that the creative motor had better insight and foresight than the adaptive one and that senior and corporate management were not at all aware. However, this conclusion would also seem to be based on rationalization by hindsight. The analysis of the creative motors does not indicate that they possessed farsighted perceptiveness, either. Indeed, it is quite clear that the creative motors did not have a more rational character than the adaptive motor. In fact, it was rather the opposite. In the adaptive motors the strategies were not accepted until there were clear and framed strategic decisions and when the probabilities of returns could be fairly well calculated. Moreover, the motors relied on experience, intelligence and careful analysis of specific industry and resource positions. By contrast, in the creative motors, the strategies were taken for granted without any critical examination or calculations. Reliance was placed on intuition and on more or less haphazard trial and error, accidental contacts and experiments.

These are confusing conclusions. First, there was rational process with an irrational outcome; the adaptive motors had more rationality compared to decision-theory models in their reasoning, but they rejected and even hindered strategy-creation. Second, however, there was an irrational process with a rational outcome; the creative motors were clearly more irrational in decision-theory terms, but they actually developed and created the strategies. In cynical terms it might be argued that the strategy-creation observed was simply fortuitous and rationalized in retrospect by *both* motors. However, this conclusion seems to be premature as well. After all it is true that the adaptive motors did not go so far as to cut off or reject all development of the new strategies, even though they could have. It is also true that there were strategic visions, albeit loose and undefined, early on in the creative motors.

It was observed that both strategic motors involved learning barriers of different kinds. Both motors in the study were incremental and were subject to cognitive distortions. The main difference was that the adaptive motor relied more on the core knowledge structure and related barriers while the creative motor involved fewer barriers of that kind. None of them followed a rule book on decision theory. In *retrospect* the creative motor had a more *rational outcome*, whereas the adaptive motor had a more *rational procedure* for addressing the future. The learning dynamics and knowledge-assimilation capabilities of the creative motors, and the way in which

they conducted their business, were regarded as quite suboptimal by actors within the adaptive motor, who compared them with their own strategy process in terms of learning dynamics and knowledge-assimilation practices. In retrospect, on the other hand, given the changed (core) knowledge structure, the creative motor processes seemed to be quite rational. At the time, however, when viewed in terms of the unchanged knowledge structure, these processes seemed to be quite irrational as an approach to the future. *The primary conclusion is that the adaptive and creative logics, their learning dynamics, and their barriers to learning - in other terms, their rationalities - differ and seem appropriate for different situations and at different times.*

Given the observations in this study, it seems as if rational outcomes do not necessarily have to be based on rational processes and irrational outcomes do not necessarily have to be based on irrational processes (Regnér, 1994). It might even be suggested that cognitive distortions and "irrationality" could be beneficial. Sjöstrand (1997, p. 199) has argued that for managers "...irrational actions are sometimes rational and rational actions are sometimes irrational".²⁶⁵ Others have also analyzed the important role of "foolishness" and irrationalities in organizations (Brunsson, 1985; Cohen and March, 1974).

If managers are too boundedly rational to use decision theory and to apply mechanisms to correct cognitive distortion, other rationalities might actually be more appropriate than perfect rationality. It might be suggested that strategies and goals could be reached through processes that appear to be "irrational". Hence, other procedures than those specified in strategy-formulation models, economics-based strategy content, and decision theory might actually be superior in generating strategies and advantageous outcomes if managers are unreliable users of planning, strategy-content and decision models. It could be suggested that even though certain procedures and learning dynamics appear less appealing on their face (e.g. experiments, trial and error, informal noticing), they still produce satisfactory results: "None of these rules or procedures need look reasonable on their face, but constantly modified by feedback, they interact in tandem to produce results that meet the desired

²⁶⁵ Sjöstrand (1997, 1992) discusses "the two faces of management" (rationalities and irrationalities) and multirationality of strategies. Both rationalities and irrationalities are argued to be important ingredients in strategic management.

external criteria (such as truth) " (Nozick, 1993).²⁶⁶ The various types of learning dynamics and procedures, including those that might seem "irrational" on their face, and their implications for strategy, appear to provide a promising avenue for further research.

12.4.3 Multiple Rationalities

In accordance with the reasoning above it seems as if learning dynamics and knowledge-assimilation practices display different kinds of rationalities. These, in turn, seem to be appropriate for different types of strategic problems. It might be suggested that strategy is made up of a set of *multiple rationalities*, with procedures based on perfect rationality being suitable for certain kinds of decisions and those based on imperfect rationality being more suitable for others (Regnér, 1994).

It has been established earlier that strategic management research so far has focused excessively either on models of perfect rationality, which can only be achieved in order/non complexity, or on models of imperfect rationality to the extent that it is only related to disorder/complexity. An alternative to these polarized approaches of perfect and imperfect rationality might be a multiple-rationality perspective. If we examine the two views of rationality above, perfect and imperfect, we can note that they are linked to corresponding views of strategy-making. In the first case strategy would be controlled in advance and the product of a conscious plan and complete knowledge, a strategy-formulation perspective (e.g. Ansoff 1965; Andrews 1971); in the second case strategy would be an emergent, more or less uncontrolled and ambiguous process, an organizational-change and strategy-formation perspective (e.g. Cohen et al., 1972; Lindblom, 1959; Mintzberg and Waters, 1985; Pettigrew, 1985a).

Hence, it can be suggested that there is an isomorphism between different learning dynamics and knowledge-assimilation practices and various rationalities and, in turn, strategy and organizational perspectives. Essentially, strategy could be conceived as rationality, a departure from the traditional view of rationality as relating

²⁶⁶ Nozick (1993) discusses this in philosophical terms in relation to truth, but it seems applicable to a wider range of phenomena, including strategic management.

strictly to individuals and of strategy as relating primarily to organizations (Singer, 1994). This conception is in consistent with the acknowledgment of organizational-level learning and cognition. In other words bounded rationality includes *a range of different bounded rationalities*.

It is a widely accepted notion in contemporary management research that rationality is not perfect, but bounded (Simon, 1955). It should, however, be acknowledged that bounded or limited rationality implies neither that strategy is completely left to deterministic external forces, nor that it is identical for all firms. Managers still have considerable maneuvering room to adapt actively to, manage, modify and create complexities, and their skill in this regard will differ among and within actors, implying that rationality is not only bounded, but also *variable* (Schoemaker, 1990).²⁶⁷

It can be suggested that bounded or limited rationality might be conceived as including a whole set of rationalities coping with different complexities, from strong rationality, assuming that management has more direct influence over strategy, to adaptive rationality, in which management is assumed to have a less direct influence. Hence, depending on the complexity of the problem, strategy will be based on a set of multiple rationalities, and the capability of handling these problems will differ within and between firms; thus, rationalities are both bounded and variable.

Fundamentally, strategy processes can be analyzed in terms of the various ways in which knowledge is generated and provides information for strategy. In lower degrees of complexity, strategy can be based on calculated rationality (e.g. strong, contextual, process; March, 1978), in which actions are connected consciously and intentionally to knowledge. For problems of higher complexity we have to shift to systemic rationality (e.g. adaptive, posterior, selective, March, 1978), which is based on the view that knowledge evolves "over time within a system and accumulates across time, people, and organizations without complete current consciousness of its history." (March, 1978, p.592).

²⁶⁷Naturally, this is a prerequisite for strategy. If all firms faced classical rationality (perfect information), there would be no room for strategy and the same would be the case if every firm confronted the same bounded rationality. Thus, the fact that rationality is bounded and varies between firms implies possibilities for strategy (cf. Schoemaker, 1990).

This study showed that creative learning dynamics played an important role in complexity even though - or perhaps precisely because - they included properties which would be considered irrational in light of previous (adaptive) strategies and logics and of decision-theory models. It might also be suggested that less clear-cut strategic issues, presenting a mix of ordered and complex aspects, also require a more integrative mix of rationalities. In this way the rationality would vary for each strategic problem within the process; thus, different rationalities in a strategy process could coexist, but for application to diverse complexities. For example, where the strategy process is characterized by low complexity it would feature strong rationality. In higher complexity it would involve contextual and process rationality, which takes into consideration the influence of context and process (Lindblom, 1959, Cohen, March and Olsen, 1972), or adaptive rationality, which emphasizes experiential learning by individuals and organizations (Cyert and March, 1963; March 1978) Finally, in chaos the only remaining possibilities might be posterior rationality, in which objectives are revealed in the interpretation of action (March 1978; Weick 1979), or selected rationality, a procedure of selection through the survival or growth of strategies, in which managerial action is of little or no importance to the outcome (Hannan and Freeman, 1977).²⁶⁸ For each of these *multiple rationalities* there are variations among actors, managers and firms. They will differ in coping with the various complexities. This variation is the fundamental reason why firms exhibit different strategies and thus also differ in profitability. *The challenge for the firm is to determine the relevant rationality for a particular context.*

The proposal that strategy processes ought to be examined in terms of various rationalities corresponding to variations in complexity in the outer context, rather than analyzing the whole process in terms of one rationality perspective, can be imagined as a configurational perspective (cf. Mintzberg, 1989; Mintzberg, 1979), but not on the level of the organization or strategy process. *It is rather a configurational view on the level of different complexities within a particular strategy issue, with each complexity corresponding to a particular rationality configuration.* Hence, a strategy process could

²⁶⁸Naturally, this process is even more complicated, as rationality will vary depending on the level in the organization (e.g. individual, group, organization) and depending on the time perspective. Rationality from the viewpoint of one level is not necessarily the same from that of another; in fact we have to deal with a whole set of interacting rationalities.

involve all sorts of complexities and, thus, rationalities, so that it does not make sense to analyze it according to a view that assumes a single rationality.

In sum, it could be suggested that strategy ought to be examined in terms of a set of multiple rationalities which depend on the complexity of the strategic issues under consideration. In complete order, hyper-rationality is feasible, and in complete disorder only selected rationality is possible. In between we find a set of multiple rationalities corresponding to different complexities. It seems as if strategy should strive to focus on this set of bounded rationalities which vary among and within firms. This approach appears to provide a suitable foundation for integrating different perspectives of strategy in future strategic management research.

12.4.4 Strategic Level and Situation Specific Strategic Management

Continuing this more speculative analysis and evaluation, it might be suggested that *strategic management is situation-specific depending on strategic level, complexity and applicable learning dynamics or rationality*. It could be suggested that different levels of strategy require different learning dynamics or rationalities. Strategy-content aspects can be divided into different strategic levels. In this study the primary focus has been on industry and resource positions or levels. However, a more detailed division can be suggested: industry, strategic group, key success factors/metacompetencies, core competencies, resources and capabilities, and organizational culture.

Depending on what levels are characterized by complexity vs. order, various learning dynamics are relevant. For example, if the industry is rather well-defined (little industry change or drifting), adaptive learning dynamics are appropriate for that particular industry level. However, at the same time the resources and capabilities might be under change and might be dominated by complexity; here the creative learning dynamics would become applicable. In the case of strategy-creation, several levels are more or less likely to be characterized by complexity.

Again, however it is important to stress that order vs. complexity might not be objectively discernible states. Therefore, creative learning dynamics might be assigned to an ordered level and vice versa. From a managerial point of view, the

advice is to try out different learning dynamics at different levels, to use a *multiple set of learning dynamics and knowledge-assimilation practices*.

The main argument is that *strategic management appears to be strategy-level-specific* and thus might not be the same for all aspects of strategy. In fact, it can be suggested that strategy in general needs to be more situation-specific. Related to *strategic-level specificity* is the *context-specificity* (order vs. complexity). Both these aspects have to be taken into consideration in addition to situation-specific strategic considerations that have previously been discussed, such as type of industry and PLC (product life cycle) stage. *In other words, specific learning dynamics and strategic management procedures apply to different strategic levels and to their specific contextual character (order – complexity)*. The strategic-level specificity and context-specificity may provide fruitful directions for future research.

12.4.5 A “Strategic or Entrepreneurial View” of the Firm

The determination of different forms of knowledge coordination and combination in terms of learning dynamics and knowledge-assimilation practices has implications for the knowledge-based theory of the firm (Kogut and Zander, 1992, 1993, 1996; Grant, 1996, Zander and Kogut, 1995). The study confirms the importance of sharing and transfers of knowledge and particular its transformation. It specifies the group and learning dynamics through which individuals and groupings within firms coordinate, combine and transform knowledge. It emphasizes the importance of organizational-level learning dynamics and sensemaking in strategy development, and it specifies “what managers do” in terms of learning dynamics and knowledge-assimilation practices, compared to the exchanges on the market.

It seems as if group-dependent learning dynamics and sensemaking and their inductive strategy-creation and formation of a collective view on strategy - the knowledge structure - might help in the development of a knowledge-based or “*strategic or entrepreneurial view of the firm*”. Based on the study it seems reasonable to believe that the shaping of strategies and the “sensemaking” of them are better performed in groups or firms than by individuals on the market. *It could be suggested that the interaction and development of individual cognitive structures into*

a coherent knowledge structure and strategy is easier and provides better results when done by firms than by separate individuals in the market.

Metaphorically the firm can be compared to ancient groups or tribes in which individuals banded together in order to hunt mammoths, bulls and bison. The firm, like the tribe, is formed by groups of individuals in order to search for and act on information and knowledge. Just as individuals cannot readily hunt large animals, it is difficult for them to track down, make sense of and develop knowledge individually. In brief, the firm is stronger in capturing, coordinating and combining knowledge compared to individuals on the market. A further determination of context-specific learning dynamics and the role of different types of learning dynamics in creating and forming the firm may provide a promising research direction.

12.4.6 Strategy-Creation and the Environment: an Evolutionary Sub-Process

It might be argued that the actual change and second-order learning do not take place until sales and profits have proven strategy-creation correct. In other words, when sales and profits from a new strategy have reached a certain level, providing new career opportunities and threatening the current careers of people in the adaptive motor, radical change will follow. In this regard strategy-creation and change are connected with pressures of environmental selection. It could be suggested that a fourth strategy sub-process is involved in strategy development, an *evolutionary process*, which makes a selection between creative and adaptive knowledge.

In fact, individual career concerns and development of individual cognitive schemas seemed to be of importance in strategy-creation processes. There was a migration of people from the creative motor to the adaptive motor during the friction process, both in cognitive terms- individuals adjusted their cognitive schemas - and in physical terms - individuals moved to the units where strategy-creation was occurring. In other words, when the environment proves strategy-creation to be relevant and the new strategy completely (antithesis) or partly (synthesis) replaces the old one, there is a flow of people from the creative to the adaptive motor.

It could be argued that managers bide their time in the adaptive motor until sales and profits resulting from strategy-creation have reached a certain level, and then

migrate in cognitive and real terms. In other words, managers watch and wait until the environment has made a selection between adaptive and creative knowledge. Taken together the different sub-processes, *the creative and adaptive motors, the friction process and the evolutionary process*, could provide an integrated framework for a *co-evolutionary* model of strategy development, a model in which creative motors influence the environment, which in turn influences the organization. Such a framework could perhaps integrate different views of strategy and provide another area for future research.

12.4.7 Strategy-Creation and Complexity Theory

The focus of the study on complexity and mechanisms in complexity naturally leads to *complexity theory*, and there are some clear connections to the area. First, strategy was shown to emanate from *complexity*, which is found in-between extremes of order and chaos (Regnér, 1994). The strategies developed also exhibited a complex pattern. Hence, it seems reasonable to believe that strategy research has much to learn from complexity theory, as has been previously suggested by others (Hamel, 1998; Stacey, 1992, 1995).

One aspect which is treated in complexity theory is the importance of *inductive processes* in complexity, which also has important implications for economic theory (Arthur, 1994). The observation that the creative strategy motors appeared to involve more inductive learning and sensemaking processes, while the adaptive ones involved more deductive ones, is of interest in this context. The creative motors specifically operated close to the outer complexity and worked with the strategic puzzle. Inductive processes appear to be a prerequisite under such uncertain circumstances: "Induction is what allows us to survive in a messy, unpredictable, and often incomprehensible world" (Waldrop, 1992, p. 253). The formation of hypotheses, using heuristics, trial and error, etc. is important in a fragmentary and complex context. Research into more "irrational" strategy processes, as discussed above, might thus have much to learn from complexity theory.

A third factor is related to a central theme in complexity theory, the importance of *initial conditions* for subsequent developments. The findings showed

that the initial conditions in terms of character of knowledge structures and knowledge embeddedness (industry-, resource-, and customer-embeddedness) had important implications for the strategy outcomes. Hence, depending on where strategy is initiated, in an adaptive or creative setting, it will have significant influence on the subsequent development and outcome. In a sense this was also the core argument regarding strategy process – content relationships in the tentative model presented: the process character and its initial conditions determine the result, strategy content. These mechanisms and the interrelationships and feedback loops involved constitute a promising research area related to complexity theory. The importance of initial conditions is fundamental in dynamic models in organization theory and strategic management: "Such nonlinear dynamic models are often path-dependent or sensitive to initial conditions" (van de Ven and Poole, 1995, p.536).

It must also be acknowledged that there is a fourth important factor in the evolution of complex patterns and thus of importance to strategic management and strategy-creation in particular, but it might not be particularly attractive within a field of research with inherent normative implications. It is *serendipity* and haphazardness. Luck has not been discussed in depth in this study, but surely many would argue that it was involved in the creative strategy motors. While research into the role of chance might not interest many strategic management scholars, this factor would seem necessary to consider, and at least the circumstances under which it might be of importance could perhaps be outlined.

Finally, the suggestion that *co-evolution* is an important ingredient in adaptive systems and complexity (Kauffman, 1995) might provide another promising path for strategy research. As suggested above, in presenting a fourth evolutionary sub-process, one might propose that there is a co-evolutionary process involved in strategy making. The strategy motors influence and relate to the outer context, or the environment, via learning dynamics, and present alternative knowledge structures; the environment, in turn, influences and selects appropriate motors, knowledge structures, and strategies. It suggests a *co-evolutionary* model of strategy development, a model in which strategy motors influence the environment, which in turn influences the organization. This subject, too, is a possible field of research in complexity theory related to strategic management and to strategy-creation in particular.

12.5 Managerial Implications

12.5.1 Multiple Learning Dynamics

As stated in Chapter One, this study has not had a normative focus, and the primary aim has not been to discern how strategy-creation best can be generated and managed. Nevertheless, the inherently normative character of strategic management has been recognized in the study, and some implications for managers have already been touched upon. These and some other implications will be summed up here.

An obvious recommendation given the focus of the study is to avoid a single-minded concentration on adaptive learning dynamics and instead include more of creative learning dynamics if new strategies and growth areas are to be achieved and if the traps of certain path-dependent strategies are to be avoided. There are two fundamentally different strategy logics which require *two fundamentally different approaches to strategic management: an adaptive logic and a creative logic*.

The framework sketched in Chapter One can be translated into a more applicable form (see Figure 12.3), according to the following classification in terms of strategy content: *Outside – In* (industrial organization perspectives) and *Inside – Out* (resource-based views) and in terms of strategy process, *Inner – Out* (strategy-formulation views) and *Outer – In* (strategy-formation views).

The designations of "Inner – Out" and "Outer – In" may require further explanation. "Inner – Out" concerns strategies analyzed and developed in the center or inner parts of the organization, and communicated and implemented out to rest of the organization; the term also concerns the implementation of strategies developed in the periphery. "Outer – In" involves interpretation and implementation of strategies planned in the center, and the formation of strategies in the outer or peripheral parts of the organization that are recognized by the inner parts and subsequently implemented in the organization.

This framework might help in structuring both strategy analysis and strategy processes. It emphasizes the importance of all four aspects of strategic management and also their interdependence, especially in regard to strategy-creation. Managers need to recognize that strategy-creation concerns the integrated question of "*how to get where to go,*" as discussed earlier. It brings the four aspects together in a search

for certain processes and learning dynamics that will secure advantageous strategic positions. The focus is on developing and finding strategy processes that will generate strategy content. The companies in the study managed to combine different process aspects or learning dynamics in order to reach beneficial strategy-content positions. It seems as if adaptive and creative learning dynamics and logics need to be combined for this purpose.

	<i>Where to go?</i>	<i>How to get there?</i>
<i>Content</i>	<i>Outside - In</i>	<i>Inside - Out</i>
<i>Process</i>	<i>Inner - Out</i>	<i>Outer - In</i>

Figure 12.3: A Managerial overview of various strategic management categories.

It has been established in the study that all strategy situations can not be handled with rationalities of strategy formulation and planning. That approach merely appears to cover a limited range of learning dynamics applicable to strategy-making. As observed and discussed throughout the study, complex outer contexts require other learning dynamics. Since it might not be possible to discern the character of the outer context (order or complexity), a *set of multiple learning dynamics, or multiple rationalities*, has been suggested. This set can be considered in light of the notion of requisite variety (Ashby, 1956) implying that the internal diversity of an effective system must correspond to the variety and complexity of its environment. However, since it does not seem apparent, as discussed earlier, that it is possible to differentiate between complexity and order, it seems advisable to use a *set of multiple learning dynamics*. In this way some of the learning dynamics will hopefully be able to connect and relate to the relevant strategy context (recall the earlier metaphor of the fisherman). Furthermore, the risk of being locked into a certain strategy in terms of industry, resources or customers seems to be reduced, as does the risk of disregarding possible strategy reorientation and creation. Others have also pointed to that the use of

multiple strategy-making modes (command, symbolic, rational, etc.) would be superior than single modes (Hart and Banbury, 1994) The variety of learning dynamics and knowledge-assimilation practices and their relationship with the principal strategic levels, industry (outside-in) and resource (inside-out), are sketched in Figure 12.4.

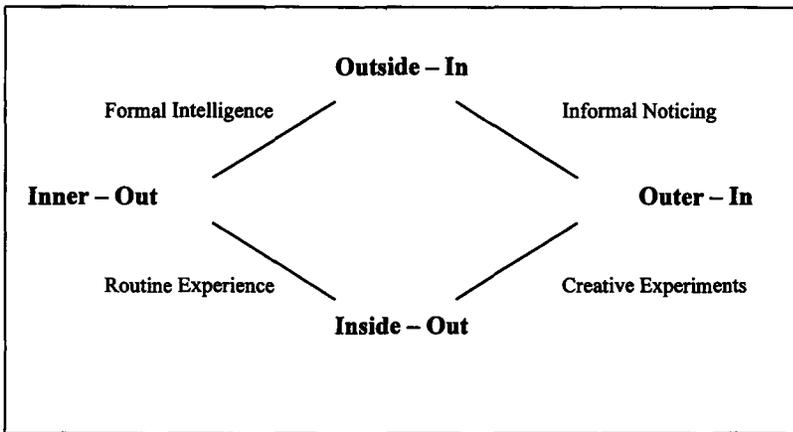


Figure 12.4: Learning dynamics, knowledge-assimilation practices and various strategic management categories.

A more detailed analysis in terms of appropriate learning dynamics for different strategic levels and corresponding strategic contexts could also be worked out, assigning relevant learning dynamics to various levels in a check list (see Figure 12.5). However, it is important to stress that management is not likely to be fully able to discern what learning dynamics are appropriate for each particular level. Instead, multiple learning dynamics for each level need to be used in order to "try out" the relevant learning dynamics as described above. Clearly, this approach can be accused of being unrealistic, since resources are limited. Hence, firms cannot afford to apply every kind of learning dynamics to every (strategic) situation and strategy level. The limited argument made here, however, is that for those situations that involve *complex foresight horizons* and that are unclear and ambiguous, other strategy logics than the traditional ones need to be considered. In general the intent of the checklist is to indicate that it is important not to neglect certain forms of learning dynamics, especially in contexts characterized by complexity. This implies encouraging what

might seem to be quite irrational and absurd ideas and ways of strategy-making. In general there is an emphasis on the need to focus more on non-traditional learning dynamics, outside the traditional spheres of planning, formal intelligence, and routine experience and to resort more to experiments, informal noticing, ad hoc trial and error, etc.

Strategic Level of Analysis	Strategic Context (order – complexity)	Strategy Logic/ Learning Dynamics (adaptive – creative)
Industry		
Strategic Group		
Key Success Factors/ Metacompetencies		
Core Competencies		
Resources and Capabilities		
Organizational Culture		

Table 12.1: A list for assigning strategy logics and learning dynamics to relevant strategic levels of analysis and their corresponding strategic contexts.

The focus on creative learning dynamics and other types of strategy-making than traditional ones may of course create tension in the organization. However, the findings indicates that tension and friction might be beneficial. The friction between the adaptive and creative motors spurred strategic change. In contrast it might be suggested that harmony and the absence of tension promote strategic simplicity and the risk of being locked into a certain strategy. Sharp conflict might actually be the best indicator of a potentially beneficial strategy, since it suggests that the new strategy is a true substitute and rival for the existing one. In addition, tension seems to sharpen and stimulate strategy-creation. Hence, differences in terms of values and beliefs and the resulting friction can even be suggested to be a prerequisite for strategy-creation.

Another possible managerial tool that emerged from the study is a specification of various strategy-creation paths. Strategy-creation can be categorized into different paths depending on its specific embeddedness. Four strategy-creation paths have been suggested in the study: *industry-, resource-, customer- and entrepreneur-embedded strategy-creation paths* (Figure 12.6). They display different types of strategy-creation and ways to earn rent, but they also involve, path-dependency and, thus, different ways of being locked in. They indicate that industry

or resource paths are not the only ones, as recommended by current strategy-content theories, but that competitive advantage can grow out of other foundations. Customer- or entrepreneur-embedded strategy-creation paths were suggested as alternative considerations.

Product		
Customer		
Present	Present	New
	Industry- embedded	Customer- embedded
New	Resource- embedded	Entrepre- neur- embedded

Figure 12.6: Strategy-creation paths.

A dilemma with the specification of managerial implications and specific strategy tools for strategy-creation is that they are intended for managers in charge, that is, for managers in adaptive motors. Therefore, there is a danger of entrapment in an adaptive strategy logic and adaptive learning dynamics. In fact, when strategy-creation implications are turned into strategic tools and used in an analysis and planning framework, they risk to become adaptive learning dynamics. In addition, it can be questioned if outer context characteristics (order – complexity) can be determined at all. It seems especially difficult if managers are located at a greater distance from it. As discussed earlier, one may question altogether the idea that strategy-creation can be controlled and managed in traditional ways, from the centre and by managers in charge, in the adaptive motors. Perhaps more uncontrollable, spontaneous and "irrational" processes elsewhere in organizations are more relevant than the strategy tools presented here.

12.5.2 Managing Strategy-creation – A Creative Logic of Strategic Management

For managers, the crucial question in relation to strategy-creation is how to initiate it and how to manage strategies under creation. Although not the primary aim of the study, this question points in a quite different direction compared to traditional strategic management advice. Prevailing strategy-content theories and their normative advice primarily emphasize the development of existing industries and resources. They also, at least implicitly, stress the usage of more or less formal strategic analysis and planning processes. Many strategy-process theories and perspectives, on the other hand, do not seem to provide normative advice since they are mostly descriptive, they emphasize the role of incrementalism and intuitive factors more generally.

Partly in contrast to these views, strategy-creation seems to require something completely different. First, focus need not be within existing industry borders and on prevailing resources, *but external, on entirely new industries, resources and capabilities*. Second, strategic planning processes ought not to play a dominating role, since strategic planning is inherently tied to the prevailing strategy; instead, *there is a need to recognize autonomous initiatives and entrepreneurship with a clear purpose and intent*. Third, the assimilation and combination of knowledge should be based more on *informal noticing and creative experiments, encouraging creativity and going outside traditional boundaries*, and less on formal intelligence gathering and routine experience. Fourth, traditional recommendations regarding management and organizational processes seem not to apply. They include degree of fit with the environment, buffering the organization from the environment, the reduction of uncertainty, focus on a common goal, reduction of conflict, creating shared views, building coherent teams, etc. However, this statement is really relevant only in regard to present and historically developed strategies within adaptive motors, not as regards the creation of entirely new strategies for the future. The management of strategy-creation is altogether different, in fact, it is rather the complete opposite. *It involves an invitation to uncertainty and ambiguity, recognition of diverse goals, an acceptance and even encouragement of tension and conflict. Furthermore it includes the management of completely diverse basic views and values within the same company, willingness to listen to crackpots with wild and nonsensical ideas that challenge*

existing ways of thinking and working. In brief, it entails an acceptance of and an active search for absurdity, incongruity and inappropriateness!

The four main factors regarding the management of strategy-creation presented above indicate that there is a totally different rationale for managing current strategies than for managing strategy-creation. Strategy-creation involves a *creative logic*, while the management of prevailing strategies implies an *adaptive logic*. However, it will probably never be possible to present comprehensive and exhaustive advice for managing strategy-creation, which specifically involves the elusive factor of creativity.

In particular, it is questionable, as discussed earlier, whether strategy creation can be deliberately initiated at all, especially within an adaptive motor. However, it is important to realize that in much of current strategic management theory and advice, there is a risk of narrowing and limiting strategy development and eliminating certain paths of strategy-creation and growth. On the other hand, as stressed earlier, it is hardly beyond dispute that continuous welcoming of absurd ideas and invitations to engage in "irrational" processes will provide satisfying results. The advice would seem to be to nurture *multiple learning dynamics*, since matching them to the relevant situations does not always seem possible and, consequently, an acceptance of and perhaps even encouragement of *tension*. The use of multiple learning dynamics implies an acceptance of a tension between creative and adaptive strategy motors and logics, since the two motors will inherently involve completely different learning dynamics and knowledge structures.

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Appendix A

Interview Guide

The interview guide used is reproduced below. It includes an overview of issues asked about in the interviews. The initial questions regarding each strategy creation process were, however, general in order to get the interviewee to speak freely about the topic. Relevant factors in the interview guide not addressed by the interviewee were then specifically asked about. In accordance with this technique the interviews did not strictly follow the sequential format below.

1. Background

Interviewee

- Date & Time
- Company
- Org. unit
- Location
- Respondent
- Position/Title
(period in position, prior position,
work experience, etc.)
- Function

Organization

- General
- Function of unit
- Location of unit

Main businesses/activities

- Businesses? Activities? changed?
- Organization structure, culture? changed?

Ownership

Industry

- main
- competitors
- partners
- inputs/suppliers
- outputs/customers
- Changes?

2. Corporate Strategy

Strategy (content)

- Strategy? (key goals, strategic plans, worldview/environment;
generally/ technology/products/market)

Strategy (process)

- How changed over the years?
- Why changed?
- In which way?
- Changed by (unit, sub, divHQ, corpHQ), person(s)?

3. Strategy Creation Process – General

Initial actions

- Internal/External stimulus?
- Initial background?
- Description of first steps?
- Specific initial actions?
- Business(es) involved?

Why? Objectives? Strategic?

Planned/spontaneous?

Who? Primary actors? Background of?

Unit? Org. struct./cult?

Other actors/units involved?

When?

Views of other internal/external actors/units?

Problems/Conflicts?

Emergent strategy

as above (Initial actions) +

- How became “strategic”?
- Changes in direction?

Views? Plans?

Internal/external?

Formed strategy

as above (Initial actions) +

- Any deliberate/formal/explicit strategic decisions?

By whom? (fora)

When?

4. Strategy Creation Process - Specific

How

- Characteristics of the formulation/formation strategy process?
- Clear and precise strategic objective?
- Strategy plan?
- Specific or well-defined procedures guiding strategy?
- Many/any strategic alternatives?
- Frequent small adjustments?
- Evaluate strategy vs. strategic objectives?

Actions

Why acted the way did?

What induced actions?

What specifically did?

What most important?

Who/what units involved in what?

Problems

Any problems? Which?

How solved?

What knew before?

What wanted to know?

Problem to acquire knowledge/understand?

Knew what wanted to know?

What stopped from acquiring knowledge?

Why did not find out?

Did know that actually needed to know?

Information/Knowledge/Understanding

Information/Knowledge gathering & acquisition:

- Any systematic analysis business environment?
- Particular unit? (strategic planning, business intelligence)
- Quantitative data/analysis?
- Kind of formal analysis?
- Informal information?
- Casual personal contacts?
- Rumours, hearsay and speculation?
- Past experience?
- Continous adjustments?
- Every day experience?
- Trial and error (market-, product tests, etc.)?
- Experimenting?
- Changes (goals, market focus, etc.) to see what worked?
- Ambiguity and chaos deliberately activated?

Informat./Knowl./Underst.: which role?

What informat./knowl./underst. involved?

Type of?

Used how?

Easy to comprehend?

New/related/old?

R&D

- What type of R&D?
- Who(m)? (units, divisions, etc.)
- Core R&D/technology?
- Focus? Problems? Changes?
- Organization of?
- External cooperations/partners?

5. Strategy Content

- What content? Specifically?
- Specific resources involved?
- Specific markets?
- How changed?
- Dramatic/slow change?
- Compared to prior strategy?
- When established?
- By who(m)? When?
- Resources/capabilities changed?
- Market positions changed?
- Org. structure changed?
- Buyers, suppliers, alliances, partners changed?

6. Strategy Context

Internal context

What important internal developments?
How did they influence the strategy?
Co-operations/relationships?
Which actors involved? (units, functions, etc.)
Regarding what?
Prior co-operation?
What resources, knowl., etc. brought?
How transferred?
Formal contracts/character?
Problems?
Any conflicts? Which?
How resolved? What foras?

External context

What important external developments?
How did they influence the strategy?
Co-operations/relationships?
Which actors involved? (partners, alliances, m&a, j/v, etc.)
Prior co-operation?
Regarding what?
What resources, knowl., etc. brought?
How transferred?
Formal contracts/character?
Problems?
Any conflicts? Which?
How resolved? What foras?
General environment
How influenced?
Limiting/restricting strategy? How?
Shape/structure?
Any changes forced by?
Economic
General econ. circumstances?
Industry?
PLC stage?
Specific market character?
Growth rates?
Political/Legal/Societal:
Which imp. Factors?
Regulations/legal factors?
How influenced?
Specifically?

Appendix B

List of interviews

Interviewee by company ¹ (average duration in parenthesis)	Position ²	Part of company	Date
Couplet³ (105 min.)			
Carl Johansson	President Scanmeck Couplet	Couplet Head Office	Feb, 1993 May 9, 1993 May-Aug. 1993 [*] Jun. 27, 1993 Feb. 5, 1994 ⁴ Jun. 17, 1994
Gustav Olsson	Vice President, Technical Coordination	Couplet Head Office	May-Aug. 1993 [*] Oct. 16, 1997
	Group Quality Manager	Couplet Head Office	May-Aug. 1993 [*]
	Group Purchase Manager	Couplet Head Office	May-Aug. 1993 [*]
	Group Research Manager	Couplet Head Office	Jun. 18, 1997
	Vice President Human Resources	Couplet Head Office	May-Aug. 1993 [*]
	Vice President Finance	Couplet Head Office	May-Aug. 1993 [*]
	Technical Manager, President Couplet Sweden	Couplet Sweden	Aug. 29, 1997
	Director Corporate Communications	Couplet Corporate Headquarter	May 13, 1997

¹ Tape-recorder used in all interviews except in three cases and elsewhere specifically indicated.

² Generally the position listed is the primary one in which the interviewee worked with or came into contact with the strategic issue in question. Position in parenthesis is position at time of interview and/or today (1998/1999).

³ In addition to the listed interviews other, less formal, interviews, and conversations and discussions with Scanmeck Couplet and Scanmeck managers took place during the author's visits to and work at the company as part of participant observation, see chapter three. All names disguised. Dates shifted a couple of years in time.

^{*} Refers to interviews, conversations and discussions during the author's visits to and work at the company (no tape recorder used and any citations made anonymous).

⁴ Private conversation and discussion regarding preliminary report on Couplet's strategic and competitor information gathering and analysis.

Ericsson (115 min.)	Position	Part of company	Date
Bertil Bogren	Controller President (Strategic Planning/ Business Development)	SRA/ERA Magnetic (Mobile Systems)	Sep. 29, 1997
Hans Flink	Marketing Manager (retired)	Switching division	May 26, 1998**
Jöran Hoff	Projectleader/Director US mobilesystem (Strategic Planning)	ERA (Mobile Systems)	Apr. 23, 1997
Christer Ihse	Projectleader/Director English mobilesystem (Director Systems Technology)	ERA (previously Switching division) (Mobile Systems)	Nov. 13, 1997
John Meurling	Director of Investor Relations (retired from Ericsson)	Switching division /Ericsson Corporate Headquarters	Oct. 2, 1997 Apr. 3, 1998**
Håkan Ledin	Vice President Public Telecom, President EIS (Vice Chairman)	Switching division /Ericsson Corporate Headquarters (Millicom and Netcom)	Jun. 9, 1997 Jan. 22, 1998** Feb. 29, 1998**
Mats Lindorff	Director and General Manager R&D Phones and Terminals Europe	Ericsson Phones and Terminals	Jul. 16, 1997 ⁵
Ake Lundqvist	President SRA/ERA (retired from Ericsson)	SRA/ERA	Jun. 24, 1997 Apr. 17, 1998**
Ake Persson	Director Software Development (Director)	ERA (previously Switching division) (Mobile Systems)	Sep. 30, 1997
Björn Svedberg	President and CEO (retired from Ericsson)	Ericsson Corporate Headquarters	May 18, 1998**
Ericsson: outer context⁶ (125 min.)	Position	Organization	Date
Berti Bjurel	Director General (retired)	Televerket (Swedish PTT)	Feb. 20, 1998
Erik Eriksen	President (retired)	Ellemtel (Ericsson -Televerket joint organization, developing digital switching - AXE)	Mar. 3, 1998

** Interview together with one to three colleagues (Henrik Glimstedt, Örjan Sölvell and Udo Zander), in the course of a research project (Kråkmårö/Krakmaro - Knowledge Research And Knowledge MAnagement in Regions and Organizations) at the Institute of International Business.

⁵ Interview made together with one colleague (Henrik Bresman) in the course of a research project (CaMiNO - Capabilities Management in Network Organizations) at the Institute of International Business.

⁶ All interviews made together with one to three colleagues (Henrik Glimstedt, Örjan Sölvell and Udo Zander), in the course of a research project (Kråkmårö/Krakmaro - Knowledge Research And Knowledge MAnagement in Regions and Organizations) at the Institute of International Business (no tape-recorder used).

Tony Hagström	Director General (retired Telia)	Televerket (Swedish PTT), later named Telia	Mar. 25, 1998****
Daniel Johannesson	President (Director General)	Comviq (Swedish private mobile phone operator) (SJ /Swedish Railroad)	Aug. 8, 1998
Torbjörn Johnsson	President (President)	Magnetic Radio Systems (Radio Design)	Apr. 16, 1998
Torsten Larsson	Vice Director General /Technical Director (retired)	Televerket (Swedish PTT)	Mar. 6, 1998
Osten Mäkitalo	Technical Director (Senior Vice President Technology)	Televerket/Telia (Swedish PTT) (Telia)	Apr. 1, 1998
Carl-Gösta Åsdal	Director/Project Leader (retired)	Swedish Telecom Radio, Televerket (Swedish PTT)	Apr. 24, 1998
Pharmacia & Upjohn (100 min.)	Position	Part of company	Date
Lars-Göran Andrén	Group Vice President Corporate Development (President, CEO)	KabiPharmacia (Biacore)	Aug. 18, 1998
Stefan Appelgren	Controller	Nicorette, Consumer Pharma, Consumer Healthcare	Oct. 3, 1997
Lars Backsell	Managing Director (President)	Self Care (Recip)	Jun. 4, 1998
Gunnar Casserstedt	Director Business Development (Vice President Portfolio Management)	Pharmacia (Pharmacia & Upjohn)	Jun. 12, 1998 ⁷
Björn Dellgren	Director Business Development and Strategic Planning	Consumer Pharma, Consumer Healthcare	Oct. 3, 1997
Jan Ekberg	President, CEO (Chairman)	KabiVitrum, KabiPharmacia, Pharmacia, Pharmacia & Upjohn (Nobel Biocare)	Jun. 18, 1998
Jörgen Johnsson	President Senior Vice President	Nicorette, Consumer Pharma, Consumer Healthcare Pharmacia & Upjohn	Jun. 10, 1998

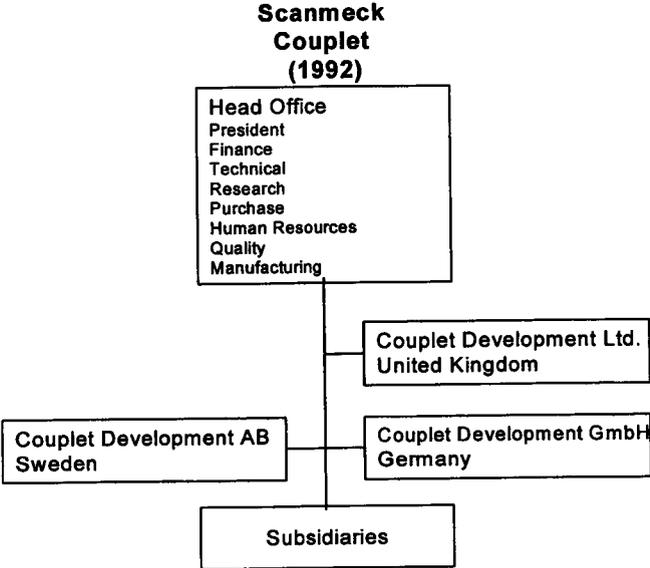
**** Interview made by colleagues (Henrik Glimstedt, Örjan Sölvell and Udo Zander), in the course of a joint research project (Kråkmarö/Krakmaro – Knowledge Research And Knowledge MANAGEMENT in Regions and Organizations) at the Institute of International Business (no tape-recorder used).

⁷ Interview made together with one colleague (Julian Birkinshaw) in the course of a research project (CaMiNO – Capabilities Management in Network Organizations) at the Institute of International Business.

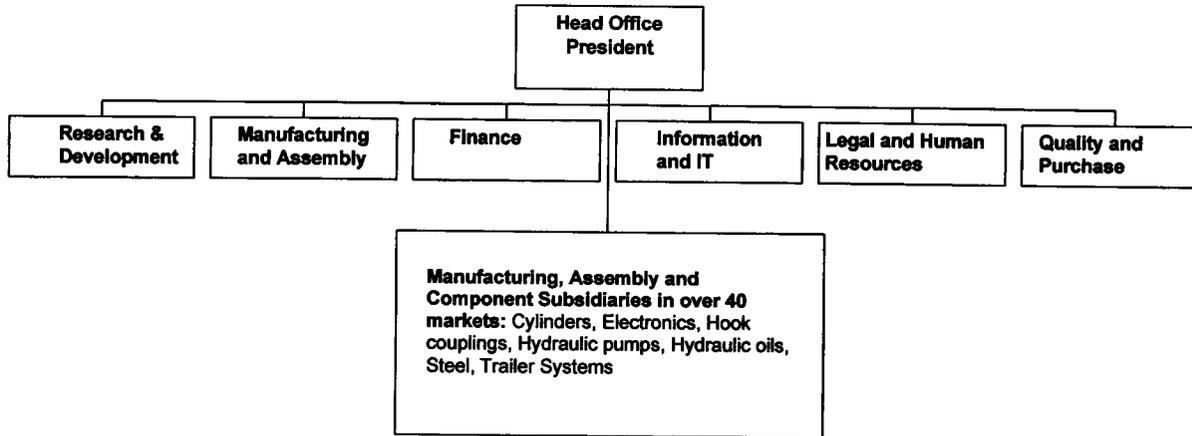
Wolter Mannerfelt	Acting Managing Director (Management Consultant, Partner)	Nordic Self Care (Carta Corporate Advisors)	Aug 3, 1998
Sölve Nilsson	Director Human Resources	Nicorette, Consumer Pharma, Consumer Healthcare	Jun. 23, 1997
Mats Ringesten	Director of Strategy and Business Development (Management Consultant, Partner)	Procordia (Neuman & Nydahl)	Nov. 19, 1997
Lennart Sorelius	Export Director President, Director Marketing (Senior Advisor)	Leo Nicorette (Consumer Healthcare)	Jun. 6, 1998
Sven Waldenström	Managing Director (Management Consultant)	ACO/(Nordic Selfcare) (Carta Corporate Advisors)	Aug. 4, 1998
Håkan Åström	President Group Vice President Senior Vice President, Corporate Strategy and Investor Relations	KabiPharmacia Pharmacia Pharmacia & Upjohn	Jul. 3, 1998
Pharmacia & Upjohn: outer context (100 min)	Position	Organization	Date
Göran Alsterlind	Director (Business Intelligence and Strategy Consultant)	Pharmacia & Upjohn: Business Intelligence/ Corporate Business Management	Jun 26, 1996
Stefan Höög	Management Consultant	Arthur D. Little	Dec. 12, 1996
Peter Weiderman	Management Consultant (President)	Arthur D. Little (Carema)	Mar. 20, 1996
AGA (110 min)	Position	Part of company	Date
Lars Källsäter	Director Senior Vice President Administration (Senior Vice President Healthcare)	Eastern Europe Project AGA (AGA)	Jun. 13, 1996
Lars Timner	Coordinator Director Technology (Special projects)	Eastern Europe Project AGA (AGA)	Nov. 26, 1996
Anders Rungård	Regional Managing Director (retired from AGA)	Europe, Continental Europe & USA	Nov. 22, 1997
Sven Ågrup	Chairman of the Board & Executive Chairman (Chairman of the Board)	AGA (AGA)	Nov. 11, 1997

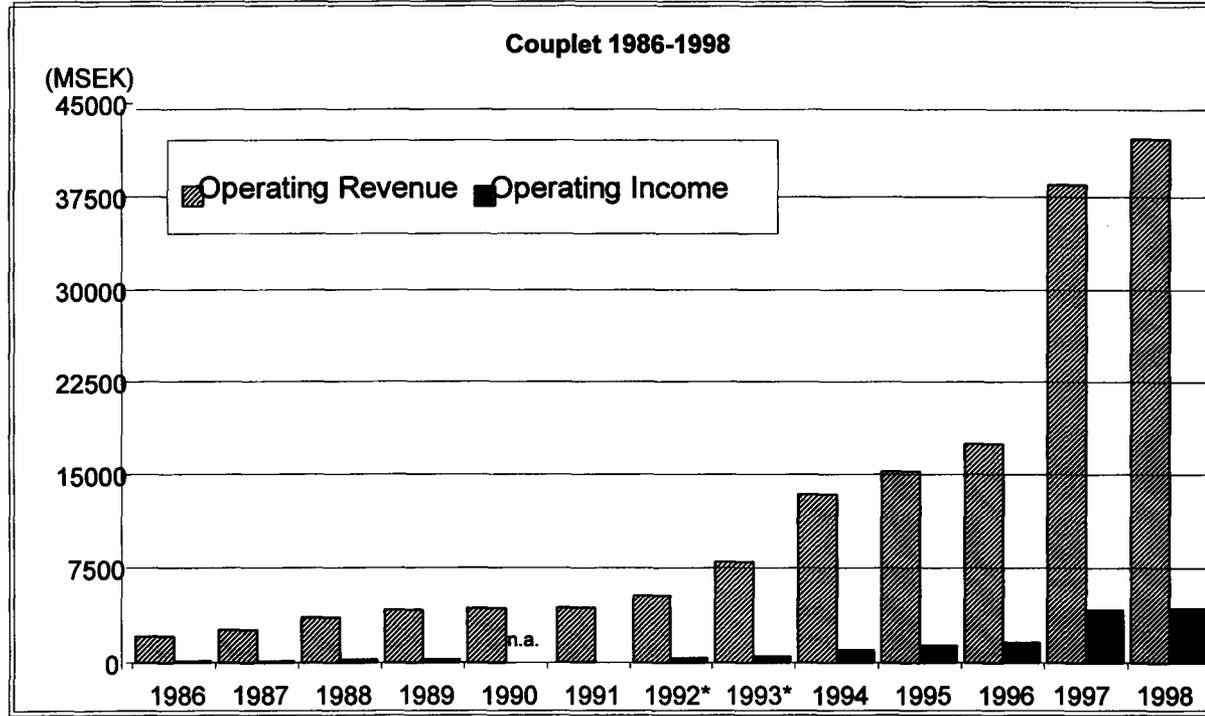
Appendix C

- Appendix C: Figures and organization charts based on annual reports and company documents (information disguised).
- Appendix D-F: - All figures based on annual reports
- Organization charts based on annual reports, Lilja (1997) and Wijkström (1991).

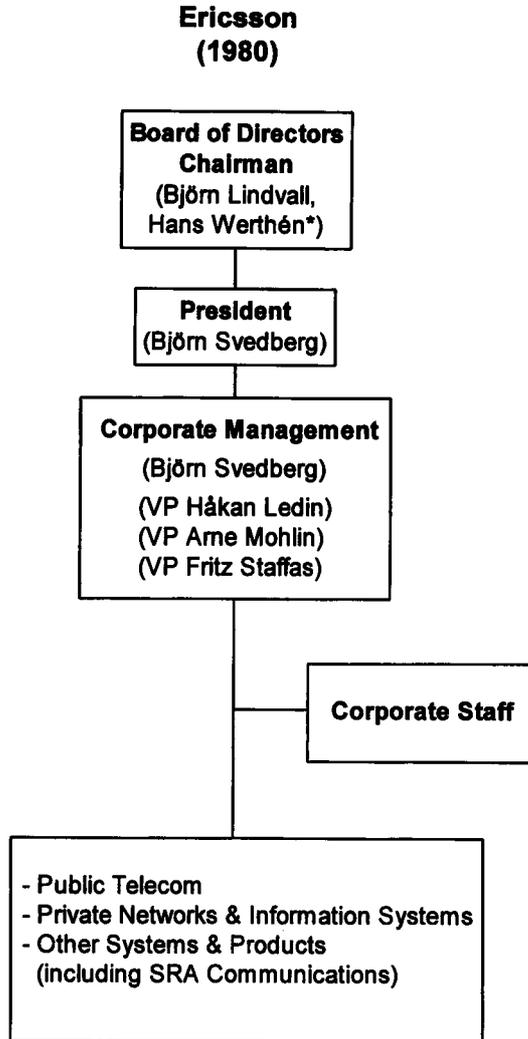


**Couplet
(1998)**



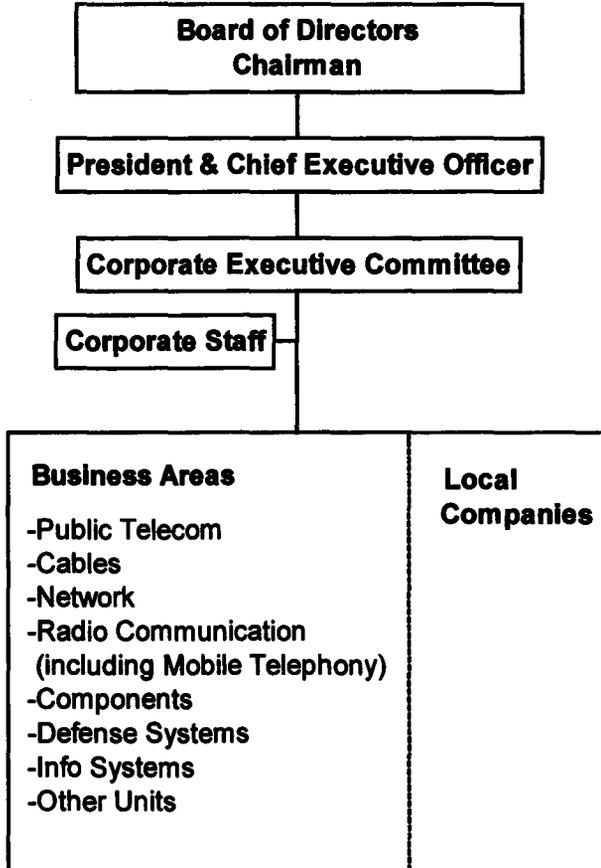


Appendix D

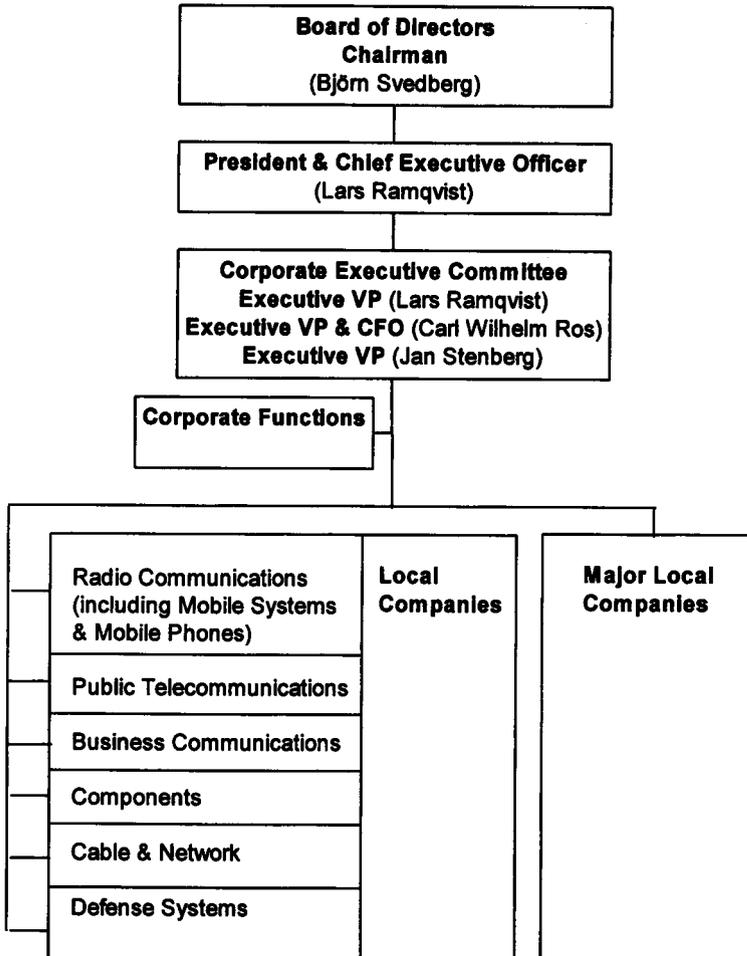


*) Björn Lindvall died in September 1980

**Ericsson
(1983, after reorganization)**

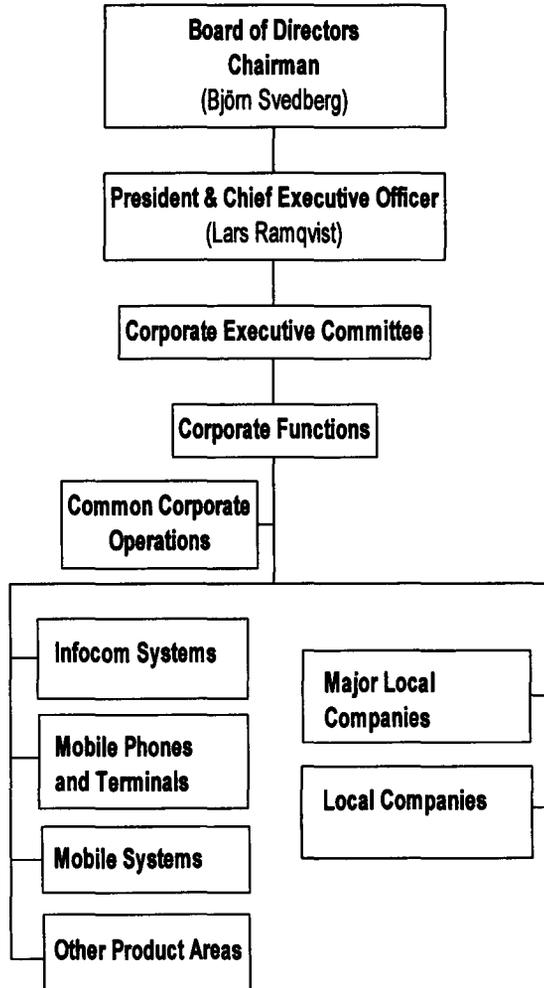


**Ericsson
(1991, after reorganization)**

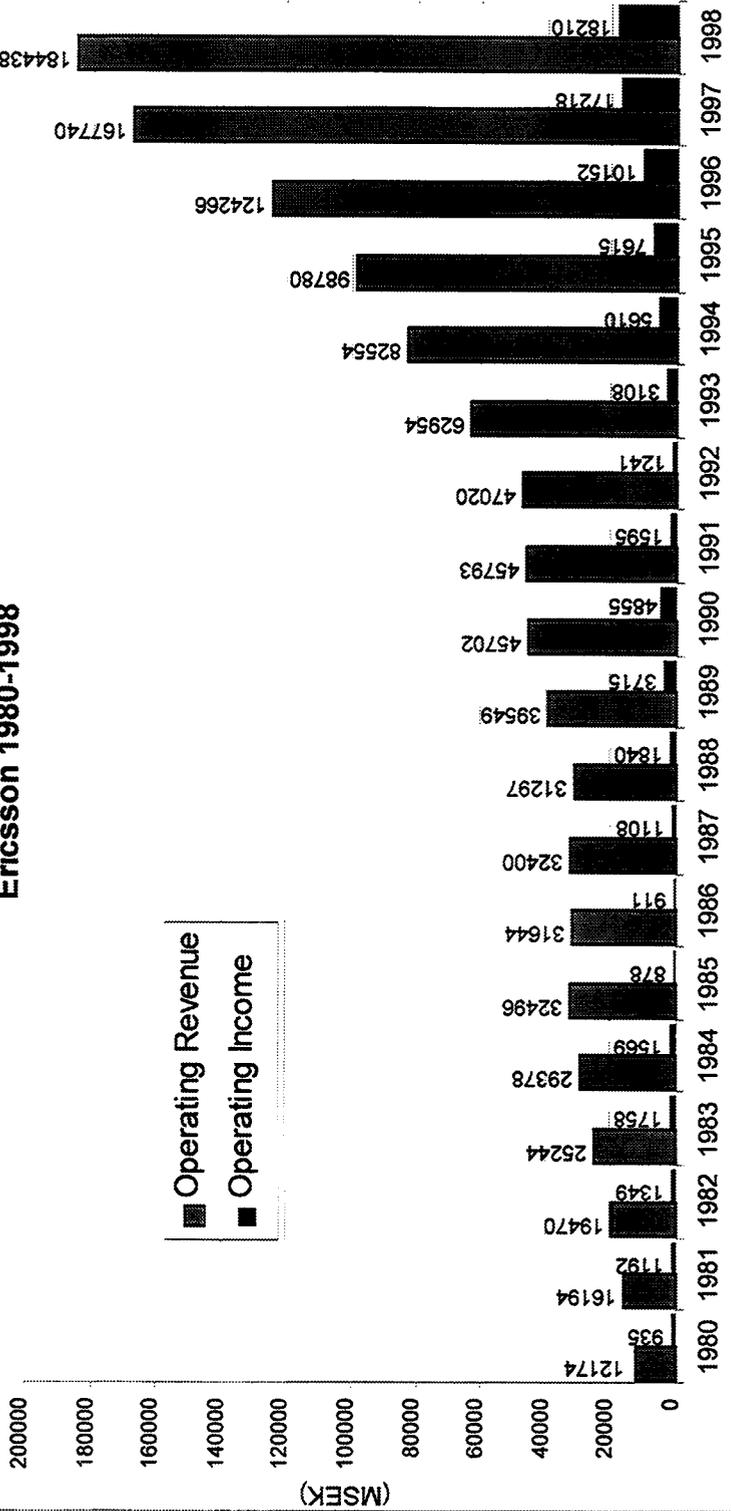


Ericsson

(1997, after reorganization & separation of Radio Communications into two Business Areas: Mobile Phones & Terminals and Mobile Systems)

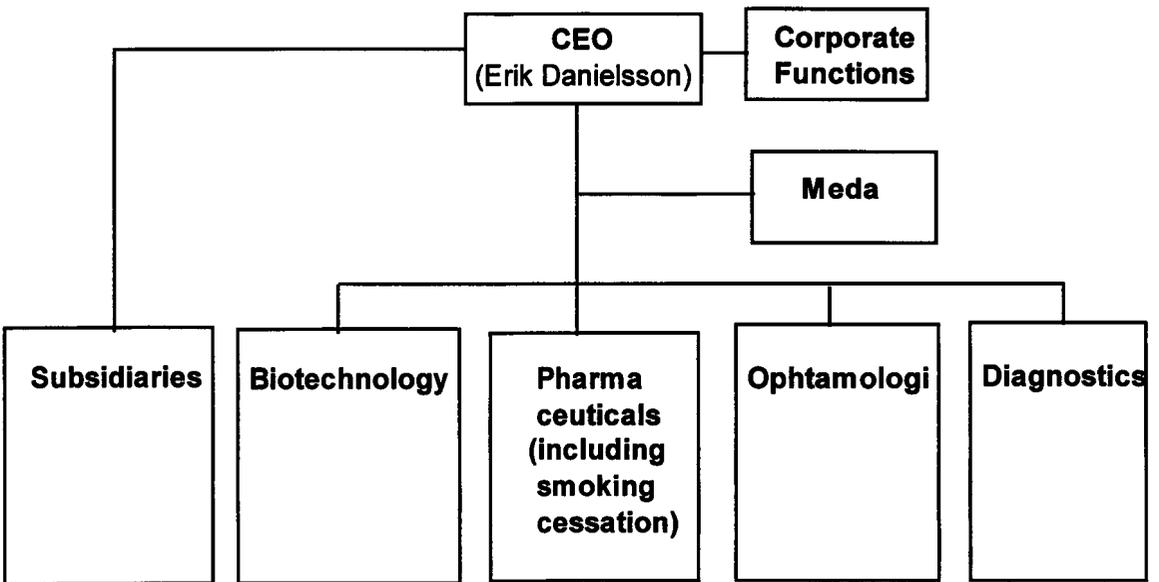


Ericsson 1980-1998

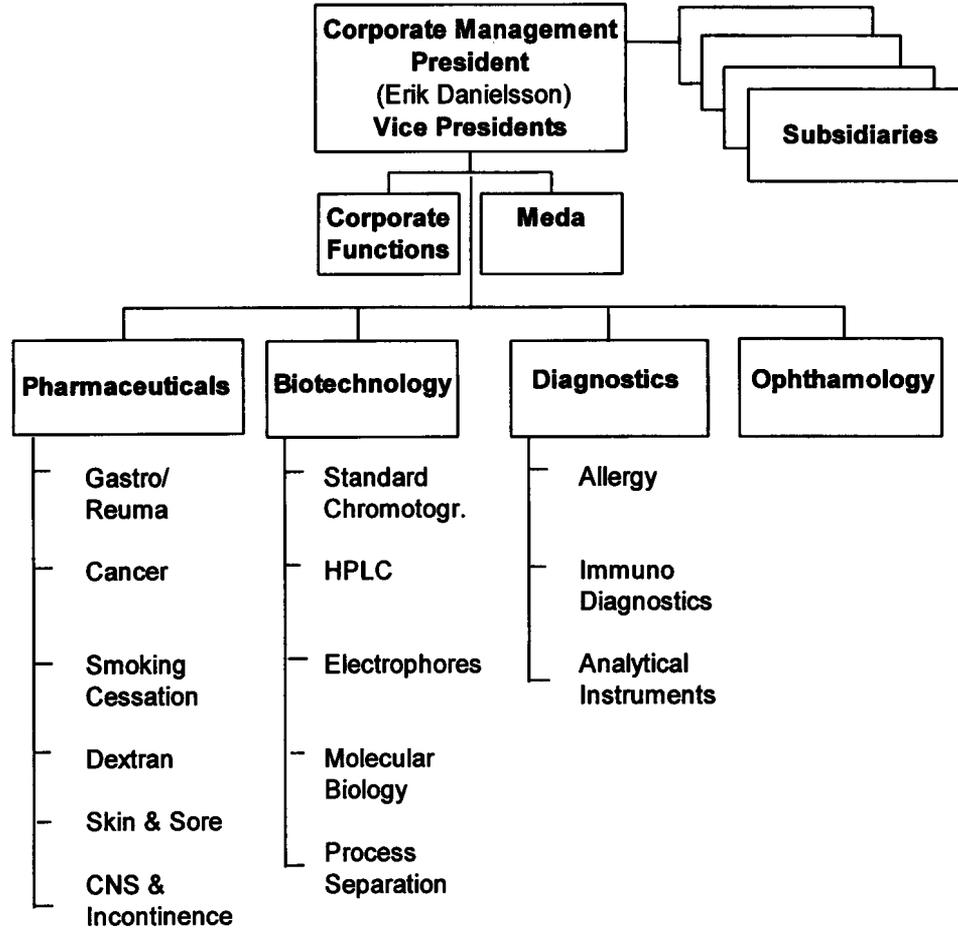


Appendix E

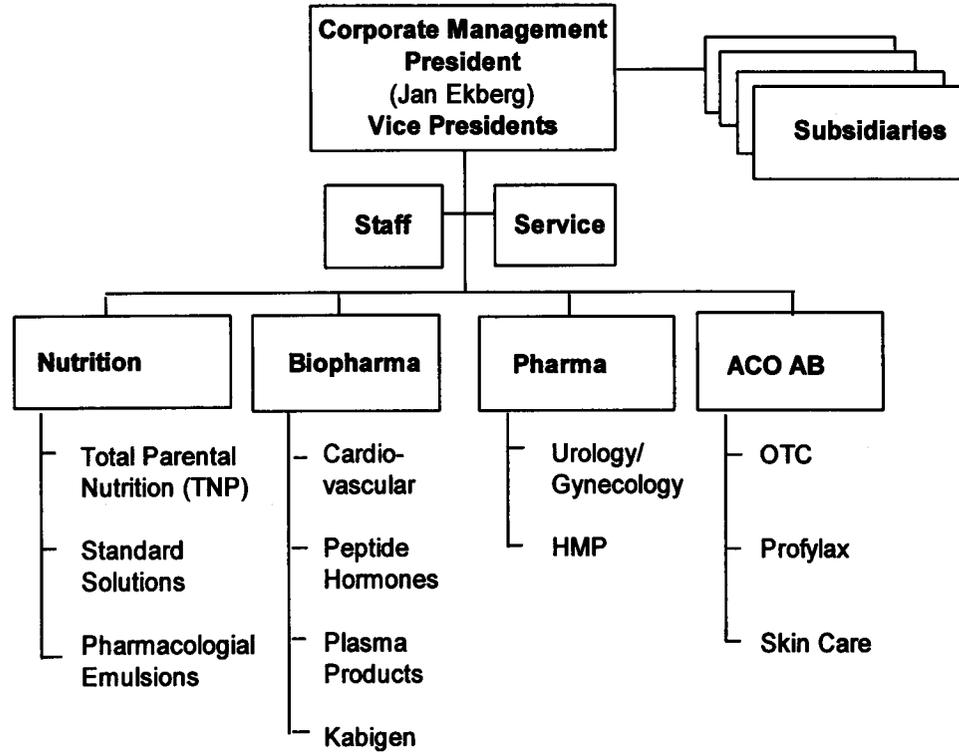
**Pharmacia
(1987, after acquisition of Leo)**



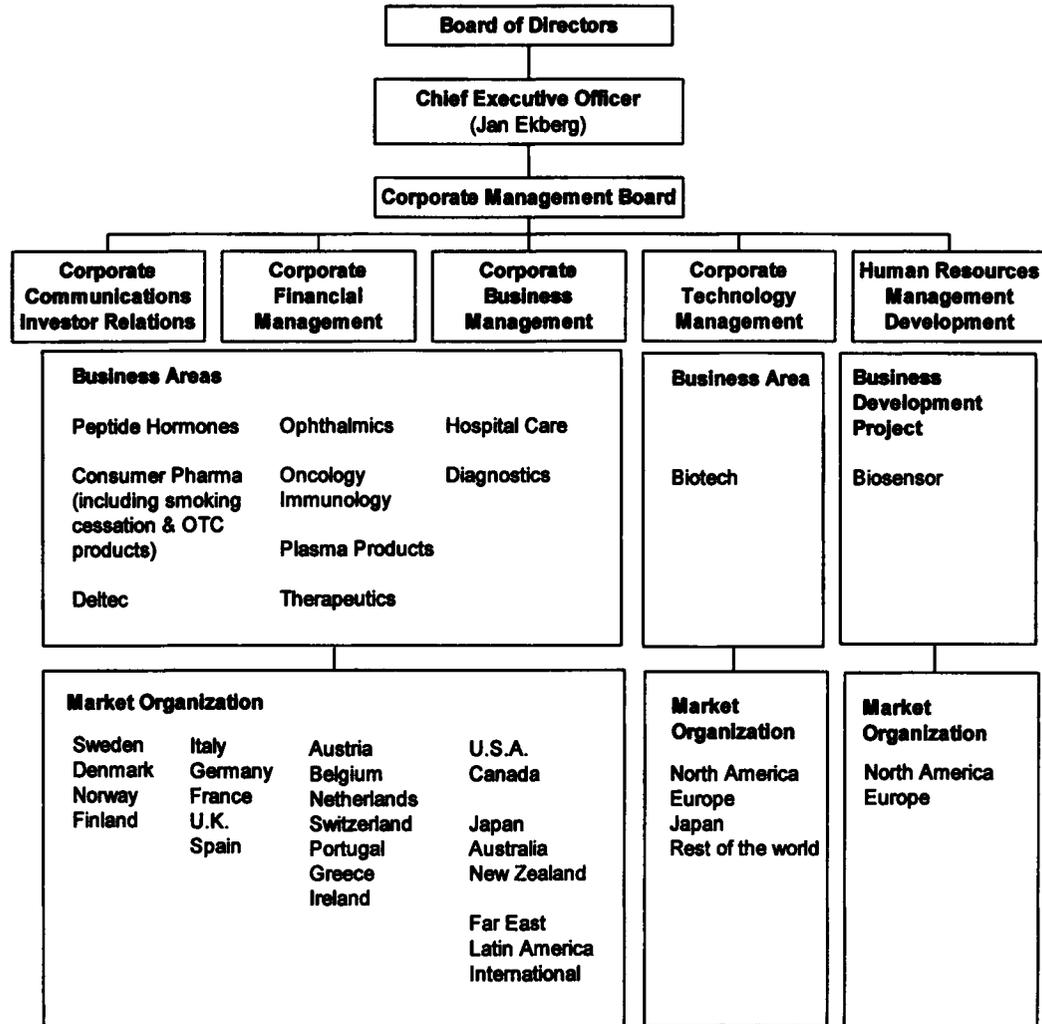
Pharmacia
(1989, before merger with Procordia/Kabi)



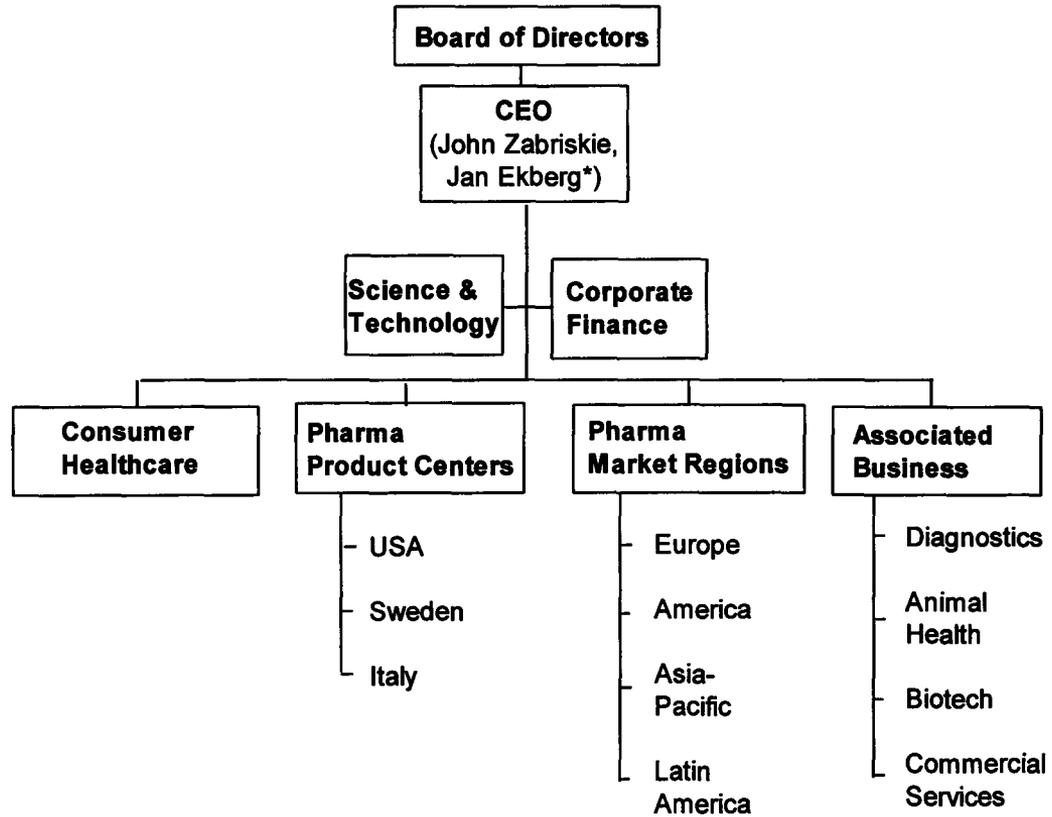
Kabi
(1989, prior to merger with Pharmacia)



**Pharmacia
(1993, after de-merger of Procordia)**

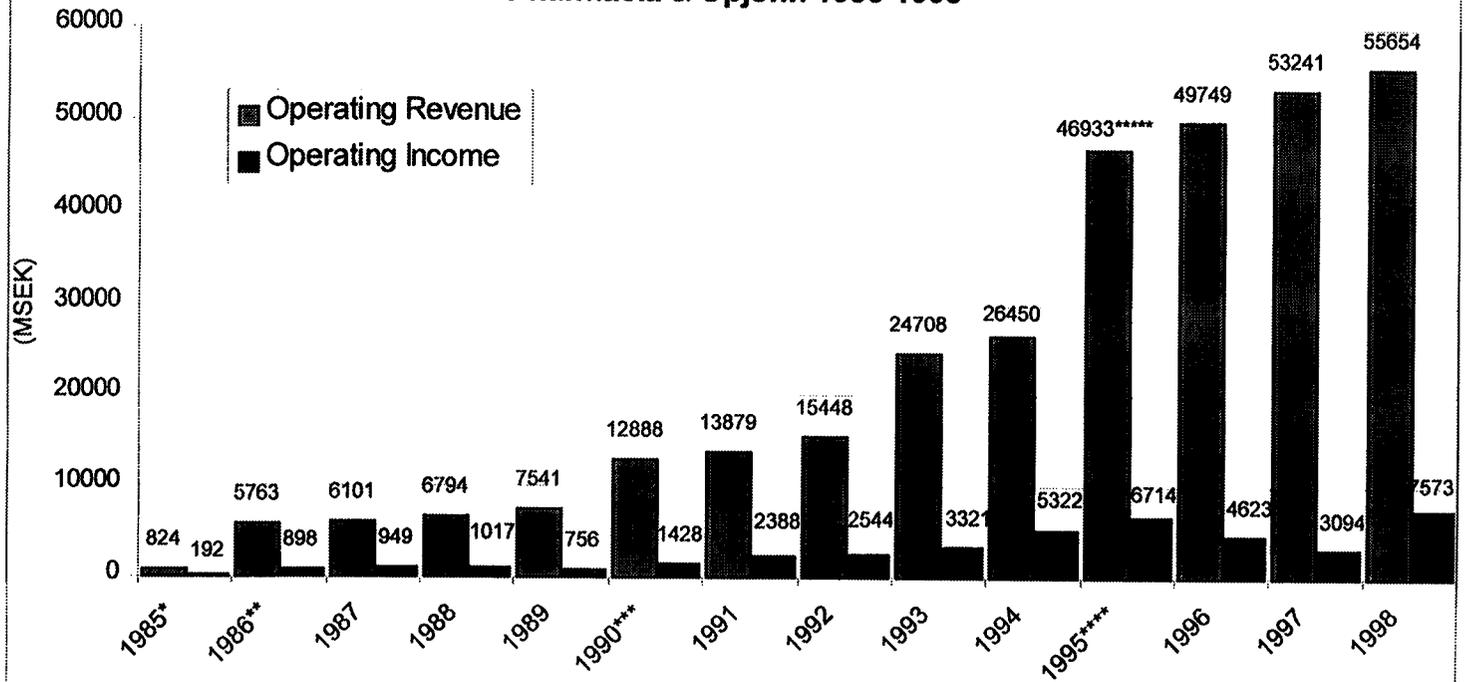


Pharmacia & Upjohn (1996)



*) John Zabriskie resigned and was replaced by Jan Ekberg

Pharmacia & Upjohn 1985-1998



1995-1998 figures:

****) Converted from USD per 31 of December each year.

****) Pharmacia & Upjohn

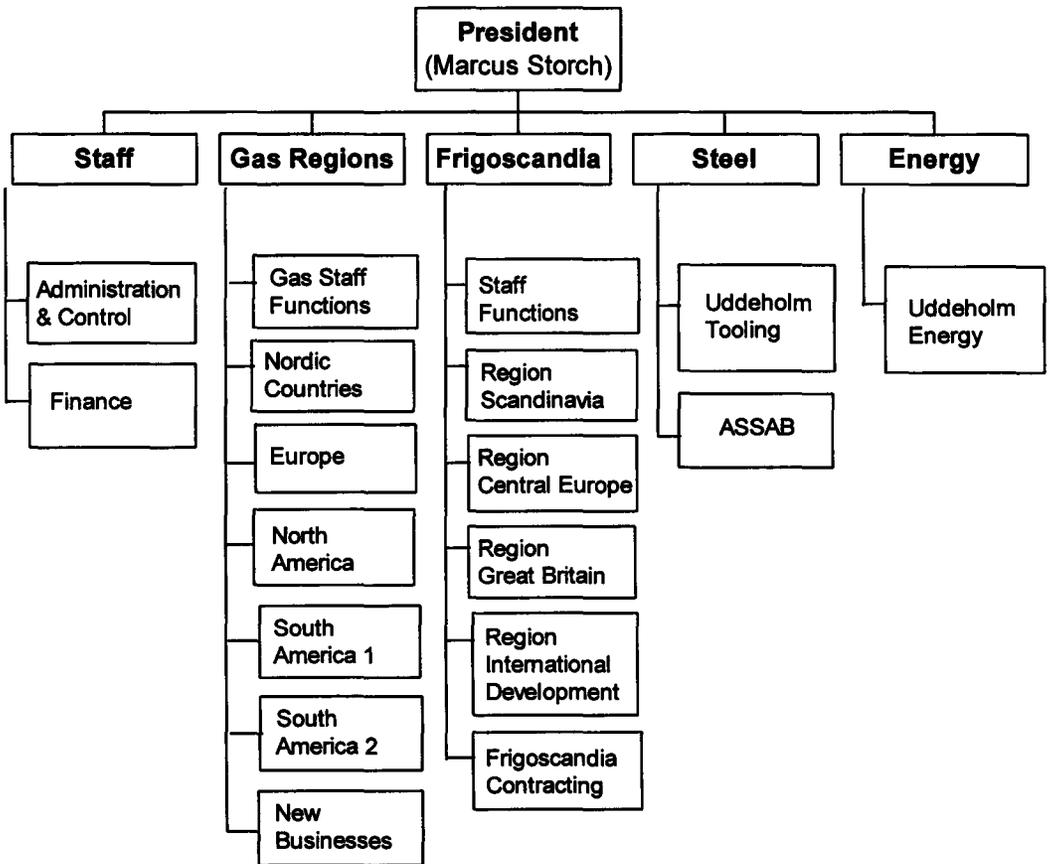
***) Kabi Pharmacia

**) Pharmacia including Leo

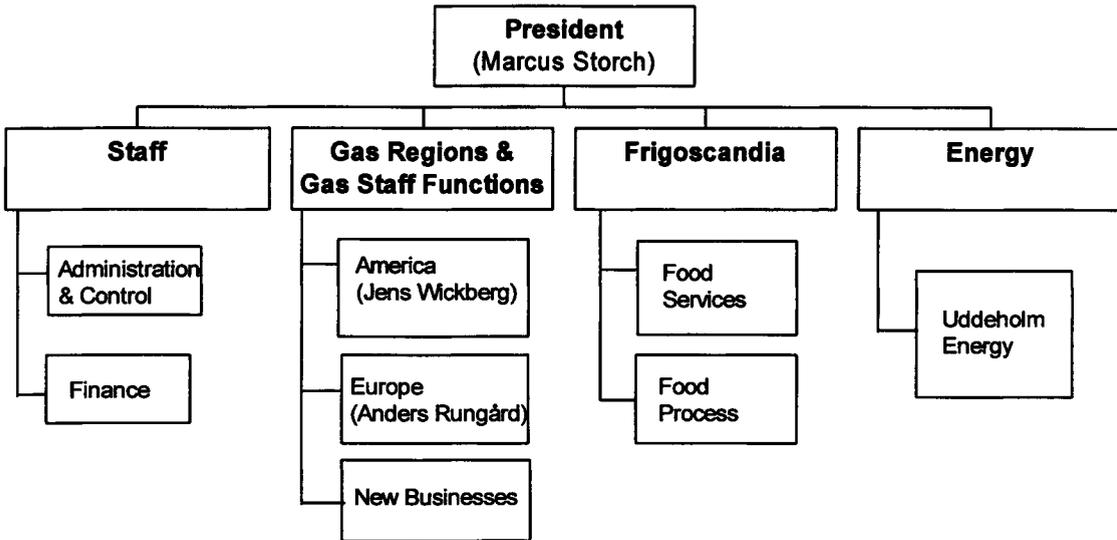
*) AB Leo

Appendix F

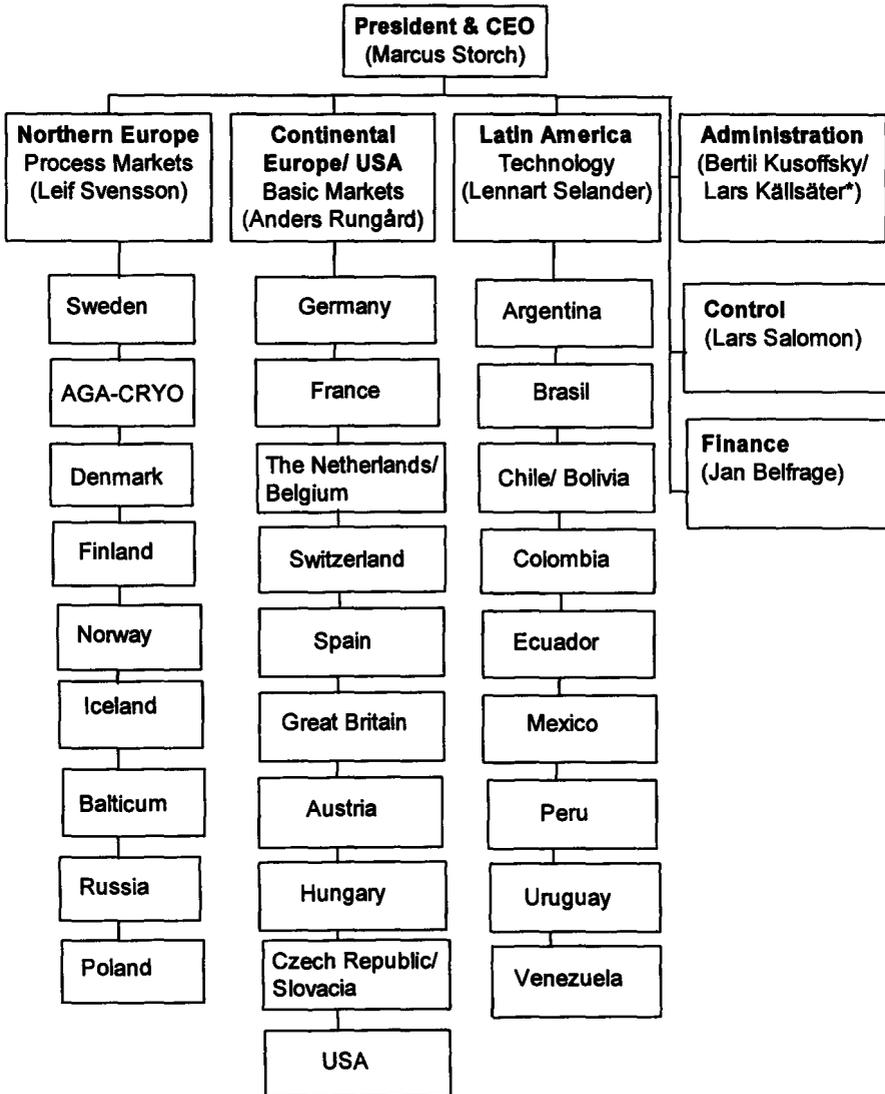
**AGA
(1988)**



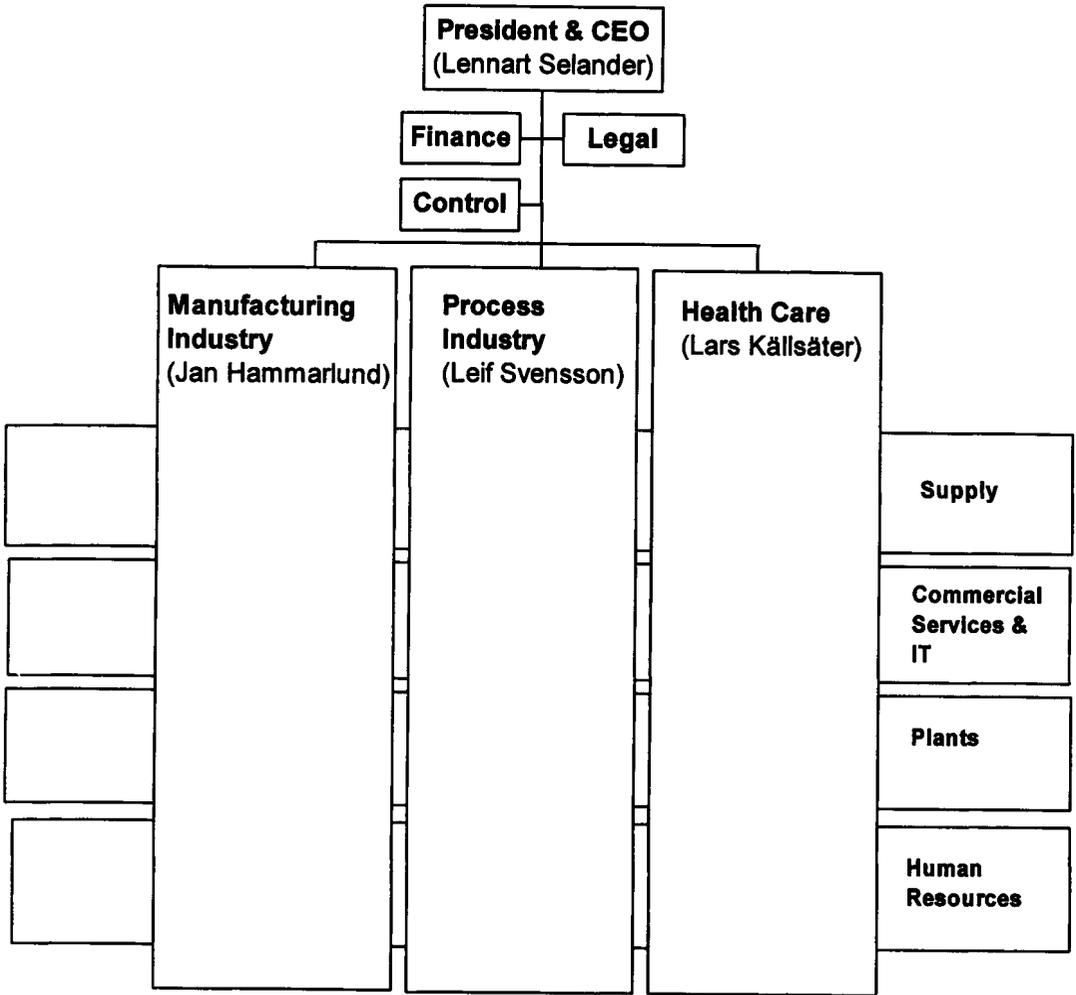
AGA
(1989, after reorganization)



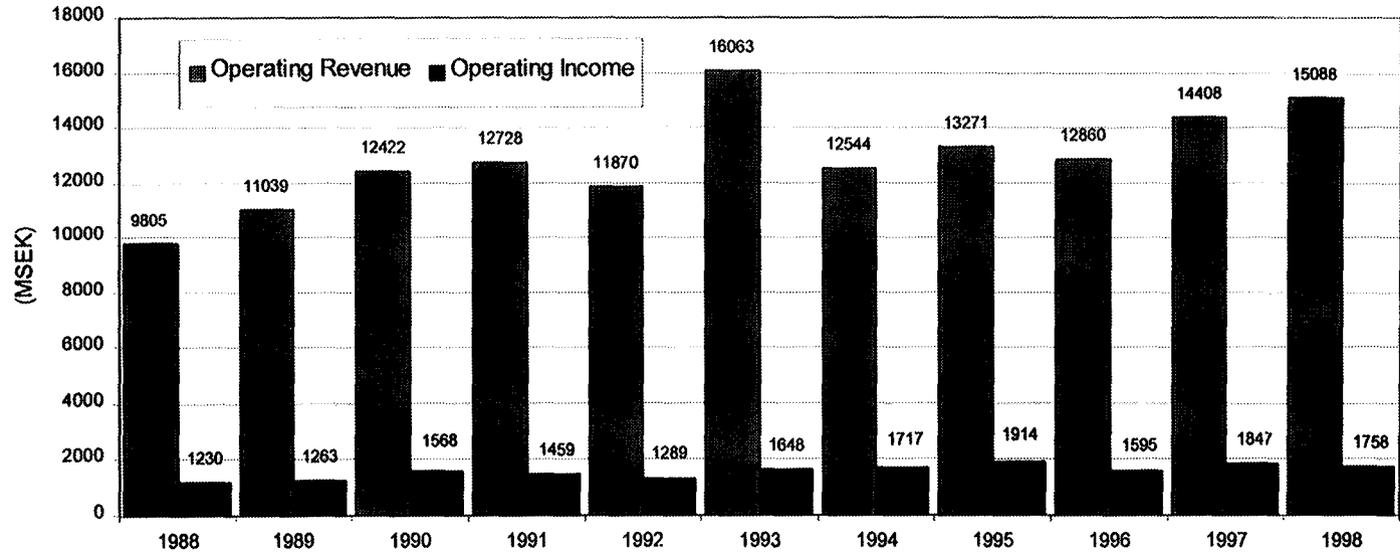
**AGA
(1994, after reorganization)**



AGA
(1997, after reorganization)



AGA 1988-1998





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