Crafting strategy imaginatively
(An integrated framework based on a single-embedded case study)

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M.G., Carmine Superiore, July 2002.
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This is not a pipe.
Rene Margritte, 1926

Fortis imaginatio generat casum.
Michel de Montaigne, 1580

Important is the logical process through which companies can unleash corporate imagination.
Gary Hamel, 2000
Chapter One: Introduction

1. The research problem

In many organizations, as well as in much of the academic literature, crafting strategy\(^1\) is about attempting to predict a foreseeable future, making decisions in advance, and controlling the realization of strategic plans (e.g. Rumelt, Schendel, and Teece, 1991, 1994). However, the most recent research shows that the business landscape is neither stable nor predictable, making prediction and control very difficult (e.g. Burgelman, 2002; Hamel, 2000; Müller-Stewens and Lechner, 2001; Leibold, Probst, and Gibbert, 2002). Under these circumstances,

> “the problem... is one of imagination. There is not one future; there are as many potential futures as companies. But any company that can’t imagine the future is unlikely to be around to enjoy it. Living in the here and now, caught inside industry conventions, and concerned only about the next quarter, many managers miserably fail at the task of imagining the future” (Hamel and Prahalad, 1996: 242, emphasis added).

Indeed, both scholars and managers have raised serious concerns about the extent to which existing approaches to strategy-making can help the firm in envisioning, conceiving, and realizing more imaginative strategies (Weick, 1989; Szulanski and Amin, 2001; Hamel, 1996; Porter, 1991; Chackravarty, 1997). It does therefore not seem surprising that the most recent research increasingly calls for greater attention to imagination in crafting strategy (Szulanski and Amin, 2001: 537; Hamel, 2000: 3; von Krogh, Ichijo, Nonaka, 2000: 166-168; Roos and Victor, 1999: 348). For example, Porter argued, “the most successful firms are notable in employing imagination to define a new position or find new value in whatever starting position they have” (Porter, 1994: 441-442, cited in Szulanski and Doz, 1995: 17).

In response to these calls, the present dissertation sets out to shed more light on the challenging task of envisioning, conceiving, and realizing imaginative strategies by proposing a specific framework. This framework integrates previous work from the realms of strategy process and strategy content research and was empirically validated using qualitative case-study evidence from the Siemens corporation, a major

\(^1\) This dissertation uses “strategy making” and “crafting strategy” interchangeably.
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diversified firm in the electronics and electrical engineering industry. To introduce this research, the present chapter elucidates the practical and theoretical background of the research problem, provides the specific research objectives that follow from this background, and gives relevant definitions in order to delineate the scope within which these objectives are analyzed.

1.1. Practical background to the problem
Crafting strategy imaginatively seems very much the center of interest in the contemporary, dynamic, business landscape; McKinsey has started a ‘war for talent’ in the area, and numerous ‘Strategy Labs’ (e.g. at the University of St. Gallen, IMD, BCG, Strategos, and INSEAD) are mushrooming. When asked to comment on the role of imagination in crafting strategy, General Electric’s former Chief Executive Officer John F. Welch, reflecting on decades of chairing strategy-making sessions, told the author of this dissertation:

“It’s more important to imaginative than to be predictive... Imagination is the biggest corporate challenge of the post-nineties. It’s about developing a clear idea of what is going on around you and your company and taking advantage of this” (Welch, personal communication, April 2002).

Along the same lines, Hamel, after having researched dozens of companies in a wide variety of industries, established that the reason for the extant interest in opening ‘the black box’ of imagination in strategy-making practice is plain: “the point seems incontestable: in a discontinuous world, strategy innovation is the key to wealth creation” (Hamel, 1998:78). According to recent research, managers in industry agree that profound change in the competitive environment has indeed produced a discontinuity and dynamism in markets that seems unprecedented (e.g. Burgelman, 2002, Drucker, 1994; Toffler, 1990). The root cause of the increased dynamism in business environments appears to be the recent advances in information and communication technology that have established themselves as a top priority on managerial agendas. Most practicing managers seem to agree that the Internet and the burgeoning electronic economy have altered our fundamental understanding of the nature of competition and strategy making. The new realities include, among others, a redefinition of industry structure (Sampler, 1998), a power shift to the consumer (Prahalad and Ramaswamy, 2000; Sampler, 2001), increasing returns (Arthur, 1996),
network effects (Shapiro and Varian, 1999), channel conflict and new business models (Evans and Wurster, 1997, 2000; Porter, 2001).

In industry, therefore, there is widespread consensus that the competitive environment is very different from the one that gave birth to the concept of strategy three decades ago (e.g. Burgelman, 2002; Rumelt, Schendel, and Teece, 1994; Hamel, 1994, 1996). A review of the literature reveals that the above-mentioned changes in the competitive landscape make unprecedented demands on strategy makers in both startup companies and incumbents alike. With regard to incumbents it appears that few of Peters’ and Waterman’s ‘excellent’ companies are still excellent today (Kim and Mauborgne, 1999a,b; Peters and Waterman, 1982). For example, IBM’s share of the total market capitalization within the computing and office equipment domain fell from 45.9% in 1988 to 14.2% in 1997. During the same period DEC’s fell from 10.3 to 1.1 percent (Hamel, 1998: 79). Analogously, on the start-up side, a look at the covers of Fortune Magazine reveals that few of the 100 ‘cool’ companies selected annually by the journal are still cool a year later (Heylar, Diba, and Garcia, 2000).

In view of these developments it does not seem surprising that in business practice calls are increasingly heard for more appropriate frameworks for crafting strategy, i.e. those that emphasize imagination (e.g. Hamel, 1998: 80; Roos and Victor, 1999: 348; Eisenhardt and Sull, 2001: 108; Loewe, Williamson, and Chapman Wood, 2001: 115). Ironically, the demand by business practice for actionable frameworks that assist corporate leaders in envisaging, conceiving, and realizing imaginative strategies stands in stark contrast to the apparent inattention to strategy-making procedures by many corporate boards, especially relative to the exercise of implementing strategy or ‘strategic change.’ The conventional wisdom in business practice seems to claim “95 percent is implementation” (Roos, personal communication, June 2000). Most recently this inadequacy even led observers to ask the question: “Does corporate strategy matter?” (Bowman and Helfat, 2001). Hamel seems even more skeptical about the significance attributed to strategy making by corporate boards. According to him, strategy makers

“are an increasingly endangered species. It has been at least ten years since strategy was the brightest star in the firmament of management ideas. But by the mid-1980’s, the strategy star was beginning to dim, as managers turned their attention to quality, cycle time reduction, and other operational
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improvements. Strategy’s star was finally eclipsed in 1993, with the publication of Michael Hammer and James Champy’s ‘Reengineering the Corporation.’ It’s ironic; never has the capacity for deep strategic thinking been so necessary as in today’s turbulent environments, and yet never, in the past two decades has strategy’s ‘share of voice’ been lower in the corridors of corporate power” (Hamel, 1998: 79).

The root cause compounding this intensely contemporary matter is that strategy making, while increasingly sophisticated, efficient, and rigorous is apparently less and less imaginative (Roos and Victor, 1999: 348; Szulanski and Doz, 1995: 17). Hamel makes a colorful explication of this point by saying that while the strategy literature seems replete with all sorts of recommendations, “managers simply do not know what to do with all the wonderful concepts, frameworks, and buzzwords that tumble from the pages of the Harvard Business Review” (Hamel, 1998: 80). At the heart of this issue seems to be Roos and Victor’s description of the archetypal exclamation in boardrooms on a Friday afternoon after a four-month strategic planning session: “this is disheartening – our portfolio strategy looks a lot like the one we came up with five years ago” (Roos and Victor, 1998: 1).

Overall, from the perspective of business practice, it appears that ‘what managers do’ in terms of crafting strategy suffers from inattention by corporate boards. When strategy making is accorded adequate attention, executives frequently lack the necessary knowledge and frameworks to envisage, conceive, and realize imaginative strategies. Often imaginative strategies are attributed to artistic, intuitive, or vague leadership competencies. In business practice, therefore, the actual act of crafting strategy imaginatively often remains a ‘black box.’ This drawback seems particularly unacceptable in view of the intense need for more appropriate strategy-making procedures in today’s discontinuous business environment, and speaks loudly of the need for an integrated framework for crafting strategy imaginatively in order to provide glimpses into the ‘black box’ of strategy-making practice.

1.2. Theoretical background to the problem

Similarly to their colleagues in business practice, increasing numbers of prominent thinkers in business theory have recently been observing that the processes by which firms envisage, conceive, and realize strategies are incompletely documented (e.g.
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Two main streams of thought to learning more about the making of strategies stand out in the literature, namely strategy content research and strategy process research. The literature review for this dissertation has established that the two are not well integrated. To illustrate: although considerable research has been focused on strategy content in terms of specific industry (Porter, 1980, 1985, 1991, 1998, 2001), or resource structures (Barney, 1991; Prahalad and Hamel, 1990; Peteraf, 1993; Wernerfelt, 1984, 1995), less attention has been devoted to how these structures arise in the first place. Similarly, while much strategy process research has examined contextual factors, decision making processes, intuitive and analytic aspects (e.g. Mintzberg, 1976, and Waters, 1985; Pettigrew, 1985), less study has been done on specific managerial practices determining the origins of and the connection to these industry and resource positions. In brief, the conceptual development at the interface between strategy process and strategy content research is in a preliminary state (e.g. Burgelman, 2002; Schendel, 1992; Rumelt, Schendel, and Teece, 1991, 1994; Chakravarthy and Doz, 1992). This suggests that great potential for a theoretical contribution resides in conceptually developing the interface between strategy content and strategy process research.

Compounding this lack of conceptual development at the interface between these two streams of thought is the apparent lack of integration within each of them. The first of the two streams of thought, strategy process research has seen a number of integrative frameworks (e.g. Hart, 1991, 1992, and Branbury, 1994). However, these do not seem to be very influential, and much terminological as well as conceptual confusion appears to characterize the field. In particular, it is not at all clear what is meant by the term ‘process.’ Van de Ven considerably advanced strategy process research by defining the term ‘process’ in terms of a number of steps, but it is still not clear how many steps are involved in this process (van de Ven, 1992: 172; Mintzberg and Lampel, 1999; Fahey and Christensen, 1987). Authors seem in agreement that since van de Ven’s (1992) major contribution, strategy process research has languished through want of attention and does not seem to have progressed much further (e.g. Hamel, 1998; Eisenhardt, 1999). This suggests that great potential for a theoretical contribution resides in integrating the multitude of perspectives in strategy process,
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particularly with regard to the number of steps that can be seen to comprise the strategy process.

The situation seems even more problematic in the case of the second stream of thought, strategy content research. In contrast to strategy process research, this field has flourished over the last two decades, and has contributed considerably to our understanding of industry structures (e.g. Porter, 1980) and resource structures (e.g. Prahalad and Hamel, 1990). However, cross-fertilization between groups of scholars focusing on either industry or resource structures seems virtually absent to date (e.g. Roos and Victor, 1999; Lissack and Roos, 1999, 2001; Eisenhardt and Galunic, 2001; Priem and Butler, 2001a). In addition to this, the most recent stream of research in strategy content (typically called the ‘dynamic capability approach’) criticizes both the Porterian industrial economics approach as well as the resource-based approach for neglecting the tendency of industry and resource positions to erode over time (Eisenhardt and Martin, 2000; Zott, 2001; Hamel, 2000; Teece, Pisano, and Shuen, 1997). This suggests that great potential for a theoretical contribution resides in conducting integrative work within the three major perspectives in strategy content, particularly with regard to the industrial economics approach, the resource-based approach, and the relatively new dynamic capability approach.

In addition to insufficient integration between and within the strategy process and content realms, many authors have recently criticized strategy-making research for its lack of empirical grounding (e.g. Eisenhardt and Martin, 2000; Eisenhardt and Galunic, 2001; Williamson, 1999; Priem and Butler, 2001a). Scholars have explained this inadequacy by referring to the difficulty researchers have in obtaining access to organizations. To illustrate: studying strategy-making procedures implies significant researcher commitment and organizational access, which few researchers appear to have achieved to date (van de Ven, 1992: 181, Mintzberg, 1979b: 583), probably because it requires researchers to place themselves in the manager’s temporal and contextual frames of reference, which demands costly longitudinal and real-time research (Mintzberg, 1979; van de Ven, 1992; Eisenhardt, 1989; Helfat, 2000). This suggests that great potential for a theoretical contribution resides in conducting in-depth empirical and longitudinal on-site research in strategy making.

Overall, from a theoretical perspective, it appears that crafting strategy imaginatively remains inadequately understood due to four main reasons:
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- First, the conceptual development in strategy making appears to suffer from a lack of integration at the interface between the strategy process and strategy content research realms.
- Second, the strategy process realm seems to struggle with the question how many steps the strategy-making process involves.
- Third, the strategy content realm appears to be characterized by a lack of integration of its main constituents, the Porterian industrial economics approach, the resource-based approach, and the relatively new dynamic capability approach.
- Fourth, strategy-making research seems to suffer from a lack of empirical, on-site research.

These inadequacies clearly evidence an acute need for a framework for crafting strategy imaginatively in order to enhance the conceptual apparatus of strategy making in a theoretically integrated and empirically grounded way.

In recognition of the theoretical and practical backgrounds to the problem, the present dissertation proposes a framework for crafting strategy imaginatively: the strategy-making matrix. This framework attempts to fill the identified gaps in the current theoretical debate on and business practice of strategy making. In developing the strategy-making matrix, this dissertation assumes an empirical and longitudinal focus and approaches the research topic deductively, and with a descriptive and behavioral-based lens (in the spirit of Barney, 1991; as well as Peteraf, 1993), rather than approaching strategy making from a prescriptive, economic and formal modeling angle (e.g. Simon, 1993).\(^2\) The following section outlines the specific research objective of this dissertation.

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\(^2\) The framework presented here should be seen as descriptive in that it spells out the characteristics of the process of crafting strategy imaginatively. A review of the literature shows that descriptive conceptualizations of strategy making have often been used as a basis for normative prescriptions. For example Quinn admonished practitioners for turning his descriptive framework of how strategy is formed in a multi-billion Euro organization into a normative theory applicable to all (see also Szulanski and Doz, 1995: 18). The framework developed in this dissertation does not attempt to be a normative model of strategy making for all organizations.
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2. The research objective

The research objective can be deduced from the practical and theoretical background of the research problem.

Should the topic of strategy making be approached from a strategy content or strategy process perspective? Which angle is more appropriate – the Porterian industrial economics approach, or the core competency approach? Over several decades of strategy research and practice each one of these two concepts has been emphasized at one time or another. By contrast, this dissertation proposes that an ‘either or’ approach is not appropriate. Instead, the present dissertation takes the stance that an integrated ‘as well as’ approach is needed to understand the important task of crafting strategy imaginatively. Indeed, this dissertation proposes that a third aspect, which will be called ‘challenging imagination,’ needs to form part of a complete integrated framework, in order to accommodate the tendency of resource- as well as competitive positions - to erode over time.

The objective of this dissertation is to contribute to an enhanced understanding of strategy making by way of (a) constructing and (b) empirically validating an integrated framework for crafting strategy imaginatively.

In the overall theoretical part, therefore, this dissertation will first attempt to build a framework called the ‘strategy-making matrix’ by integrating three major perspectives of strategy content, namely

- the industrial organization approach (which will be called ‘descriptive imagination’),
- the resource-based approach (which will be called ‘creative imagination’), and
- the dynamic capability approach (which will be called ‘challenging imagination’)

in the three steps (which will be called envisaging, conceiving, and realizing) of strategy making that are derived from strategy process research. Only after this integration in the overall theoretical part will it then be possible to deduce meaningful implications from the theoretical framework for the specific empirical part.
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In the specific empirical part, this dissertation will then attempt to test the propositions comprising the integrated framework using case-study evidence from the Siemens corporation, a major diversified firm in the electronics and electrical engineering industry. Thus, based on the theoretical framework, the empirical study endeavors to shed light on the particulars of Siemens’ approach to crafting strategy by attempting answering the following research questions:

- In how far is it important to rigorously adhere to a specific framework in crafting strategy imaginatively?
- What is the relative importance of the three imaginations in crafting strategy imaginatively?
- What is the role and importance of sequencing the steps in crafting strategy imaginatively?

3. Approach

This section describes the approach that will be used to pursue the research objective. To this end the main theoretical foundations of this dissertation are made explicit on two levels of abstraction. First, this dissertation’s scientific approach, i.e. the dissertation’s most fundamental assumptions in terms of ontology, epistemology, and methodology are discussed. Second, the assumptions underlying the key concepts on which the theoretical framework is based are discussed.

3.1. Scientific approach

Two major research paradigms, positivism and constructivism are discussed in terms of their ontological, epistemological, and methodological assumptions. With the resultant insights it is possible to position the scientific approach of the present dissertation relative to positivism and constructivism. The rationale for the positioning of this dissertation concludes this section.

3.1.1. Relevant research paradigms

A paradigm can be defined as a set of beliefs that guide action (Kuhn, 1968). It represents a set of fundamental assumptions that defines the ‘world,’ the individual’s place in it, and the range of possible relationships to that world for the researcher (Guba and Lincoln, 1994: 107). The assumptions are fundamental in the sense that
they must be accepted on simple faith: there is no way to establish their ultimate truthfulness (Denzin and Lincoln, 1994; Miles and Huberman, 1994). In social science and management research, a paradigm defines what it is that researchers are researching, and what falls within and beyond the scope of their analysis. While many different paradigms exist, two extreme positions along a continuum can be identified from the literature, namely positivism and constructivism. These two paradigms can be thought of as encompassing three elements: ontology, epistemology, and methodology (Denzin and Lincoln, 1994). Not surprisingly, therefore, most researchers agree that the paradigm of a given piece of research, such as the present dissertation, can best be conceptualized in terms of the answers it provides to three fundamental questions, namely the ontological, epistemological and methodological question (see, e.g. Guba and Lincoln, 1994; Yin, 1994; Miles and Huberman, 1994):

- **The ontological question.** What is the form and nature of reality and how can reality be comprehended? The positivist answer would assume a comprehensible and explicable reality, which is driven by immutable laws and mechanisms. Knowledge of the ‘way things are’ is conventionally summarized in the form of time- and context-free generalizations, often in the form of cause-effect laws. This stance is also commonly called ‘realism.’ In contrast, the constructivist answer suggests a relativist, rather than realist, view of the world. Constructivism postulates that reality is understandable and explicable if in the form of multiple, intangible mental constructions that are experientially based and hence local and specific in nature. The emancipation of knowledge from the context from which it emanates, characteristic of positivism, is consequently foreign to constructivism (Denzin and Lincoln, 1994: 100; Guba and Lincoln, 1994: 108; Miles and Huberman, 1994: 4).

- **The epistemological question.** What is the relationship between the knower and what can be known? The positivist reply is based on the separation of the knower and the known. The investigator and the object are assumed to be independent entities, and the investigator is understood to be capable of studying the object without influencing it, and is hence often portrayed as the ‘aloof researcher.’ This stance is also commonly referred to as ‘objectivism.’ In contrast the constructivist paradigm is subjectivist. Rather than being separated, the investigator and the object investigated are
assumed to be inextricably linked. Indeed, in the constructivist paradigm the very separation between the ontological and epistemological question blurs, or even disappears, due to the inextricable linkage between investigator and the object under investigation (Guba and Lincoln, 1994: 108; Miles and Huberman, 1994: 4; Denzin and Lincoln, 1994: 100).

- **The methodological question.** How can the inquirer go about finding out whatever he or she believes can be known? The conventional methodological approach in the *positivist* paradigm is experimental and manipulative. In line with the ontological and epistemological stances, there is an understandable and explicable reality out there and the investigator can be separated from the object he or she studies. Hypotheses are stated in propositional form and are subjected to empirical test for verification. Possible confounding conditions can be purposefully controlled to prevent outcomes being distorted. The *constructivist* answer, by contrast, is hermeneutical and dialectical. In the absence of the aloof researcher, research subject and research object jointly construct a social- and context-bound version of reality. Constructions can be elicited and refined only through interaction between investigator and respondents. Thus, rather than being separated from the object he or she studies, the researcher himself becomes a variable deserving methodological attention (Guba and Lincoln, 1994: 108; Miles and Huberman, 1994: 4).

### 3.1.2. Positioning of the study within the relevant paradigms

Where on the continuum between positivism and constructivism can the present dissertation be positioned? Several researchers have recommended a combined approach, rather than choosing one of the two extremes to position a given study (e.g. Miles and Huberman, 1994; Mintzberg, 1979; Denzin and Lincoln, 1994). The rationale is typically that paradigms can never be established in terms of their ultimate truthfulness. Instead, since all researchers approach their study via explicit or implicit paradigms, they can all be right within their specific set of assumptions (Denzin and Lincoln, 1994). It is therefore crucial to clearly establish the paradigm adopted for the purpose of this dissertation in order to facilitate its evaluation within its set of underlying assumptions. In keeping with the practice in the literature, this dissertation uses a combined paradigm. The position of the dissertation can best be elucidated in
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terms of the three constituent elements of a paradigm: ontology, epistemology, and methodology:

- **Ontologically**, the study seeks middle ground between positivism and constructivism. To illustrate: in line with positivism it assumes that there is an understandable and explicable reality out there that can be investigated and conceptualized. However, consistent with constructivism, this conceptualization need not necessarily be context free. Indeed, in the study of strategy making, context plays a very important role (see, e.g. Pettigrew, 1990; van de Ven, 1992).

- **Epistemologically**, the study leans more towards positivism. A reflection of this stance is the usage of the third person singular throughout the study. For example, while it is acknowledged that knowledge is socially constructed, the conjecture that the research subject and object are inextricably linked is not accepted at face value. Fully accepting this conjecture would demand systematically blurring the boundaries between research subject and research objects. If followed through, this would imply co-authoring the dissertation with all interviewees (as indeed is advocated by, e.g. proponents of action research, see Reason and Rowan, 1981). However, the concept of the ‘aloof researcher’ is also not applicable to this study, since the interaction between the researcher and the researched organization during the longitudinal, on-site investigation conducted for this dissertation made the non-exertion of influence impossible. Great care was therefore taken in the present dissertation to minimize potential negative impacts of this mutual influence (section 2.2.3. in the empirical part provides an in-depth discussion of the quality measures of the research design).

- **Methodologically** the study seeks middle ground between positivism and constructivism. The experimental and manipulative approach characteristic of the positivist paradigm is rejected as sub-optimal for the purpose of this dissertation. According to an established consensus in the literature, the study of strategy making requires consideration of the context of the study, which would dramatically increase the number of variables. According to several researchers, this represents a situation for which conventional positivist methodology (e.g. a survey) would be ill equipped (van de Ven, 1992;
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Eisenhardt, 1989; Mintzberg, 1979b; Schendel, and Hofer, 1979; Mintzberg and Quinn, 1993). Therefore the importance of the context in studying strategy making was accommodated by the choice of methodology, namely the single-embedded case study. The single-embedded case study is a methodological approach that seems ideally suited to accommodate context in the study of strategy making (section 2. in the empirical part provides a full discussion of the single-embedded case study methodology).

3.1.3. Rationale for the positioning

What is the rationale for using a combined approach that draws on both positivism and constructivism? The main rationale is to ensure methodological rigor through the application of a commonly agreed set of criteria to ensure high quality in social science research. Historically there has been a heavy emphasis on quantification in the social sciences (Guba and Lincoln, 1994: 105). The positivist paradigm that goes along with quantification has yielded a consensus as to the set of criteria that ensure research of high quality. These include: construct validity (the degree to which a study uses the correct operational measures for the concepts studied), internal validity (the degree to which findings correctly map the phenomenon in question), generalizability (the extent to which findings can be reproduced, or replicated by another inquirer), and reliability (the absence of random errors, enabling later researchers to arrive at the same insights as previous researchers).

The positioning of the study as a combined approach would make the application of the quality criteria to the qualitative methodology of this dissertation possible. This seems highly advantageous in view of the fact that qualitative research is as yet struggling with the establishment of a commonly agreed set of criteria to ensure high quality. Many, sometimes conflicting, suggestions abound (see, e.g. Miles and Huberman, 1994: 2; Denzin and Lincoln, 1994: 99-101; Mintzberg, 1979: 583; Wacker, 1998: 365). The lack of established procedures and conventions characteristic of the qualitative inquiry makes ensuring research of high quality a daunting task (see, e.g. Denzin and Lincoln, 1994: 99-103). As a matter of fact, this drawback represents the major challenge to qualitative research (e.g. Eisenhardt, 1989: 546-548; Yin, 1994: 21). In the absence of a consensus as to guidelines, it is

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3 A single-embedded case study is a specific type of case study. It is called ‘single,’ because it focuses on one organization. It is called ‘embedded,’ because it looks into several units of analysis within the overall organizational context (Yin, 1994).
often suggested that the criteria applied in quantitative research be adopted, namely construct validity, internal validity, and external validity (see, e.g. Yin, 1994: 23; Eisenhardt 1989: 546). The positioning of the present dissertation allows the adoption of these quality criteria emanating from the positivist paradigm to ensure rigor and disciplined qualitative inquiry (section 2.2.3. in the empirical part provides an in-depth discussion of the quality measures of the research design).

3.2. Definitions of key concepts

While the previous section discussed this dissertation’s most fundamental assumptions in terms of ontology, epistemology, and methodology, the present section provides the assumptions underlying the key concepts on which the theoretical framework is based. To this end, four concepts are defined: first the term ‘framework’ is defined. Subsequently, strategy making, strategy process research, and strategy content research are defined.

3.2.1. Framework

This dissertation’s understanding of a strategy-making framework as a theory-building and practice-oriented tool is derived directly from Porter’s conception of theory development as a choice of either limited models or comprehensive frameworks (Eppler, 2000: 8). Porter (1991) views frameworks as a legitimate form of research that can be validated through case studies. According to him,

“Frameworks identify the relevant variables and the questions which the user must answer in order to develop conclusions tailored to a particular industry or company.... [However,] all the interactions among the many variables in the frameworks cannot be drawn. Frameworks seek to help the analyst to better think through the problem by understanding the firm and its environment and defining and selecting among strategic alternatives available” (Porter, 1991: 98; emphasis added).

Porter’s conceptualization of what a framework in strategy entails is applicable to the present dissertation. This author’s conceptualization of a framework becomes even clearer when contrasted with his conceptualization of a ‘model.’ The author emphasizes:
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“Each model abstracts the complexity of competition to isolate a few key variables whose interactions are examined in depth. The normative significance of each model depends on the fit between its assumptions and reality. No one model embodies or even approaches embodying all the variables of interest and hence the applicability of any model’s findings are almost inevitably limited to a small subgroup of firms or industries, whose characteristics fit the model’s assumptions” (Porter, 1991: 97-98).

Porter’s understanding of a framework is strictly adhered to in this dissertation. This dissertation posits that what is appropriate strategy-making behavior depends on the situation and cannot be determined in a dogmatic or peremptory fashion. Thus with the successive arising of new situations and new realities, reexaminations of aims and measures are necessary to ensure the maintenance of an effective alignment of efforts with actualities. The understanding of ‘framework’ in this dissertation is therefore in contrast to the focus of ‘models’ on a limited set of variables that are connected by causal relationships.

Overall, for the purpose of this dissertation, Porter’s (1991) conceptualization of frameworks in strategy can best be summarized by proposing that frameworks: are descriptive, rather than normative, are a legitimate form of research, subject to empirical validation, are action-oriented, i.e. they seek to provide guidance for the practicing manager, and focus both on what could be done in strategy and how this might be accomplished.

3.2.2. Strategy making

Since the theoretical framework of this dissertation focuses on strategy making, the key concept of strategy making itself deserves closer inspection. This section discusses the definition of strategy making adopted in the present dissertation.

Strategic management as a field of scholarly investigation is characterized by two key distinctions. The first is between strategy formulation (or strategy making) and strategy implementation (or strategic/organizational change). The second distinction in the literature is between strategy process research (how strategies are formed and implemented) and strategy content research (what the relationship is between strategic choice and performance). The first distinction is the topic of this sub-section. The following two subsections deal with strategy process and strategy content, respectively.
Crafting strategy imaginatively, as it is seen in this dissertation, concerns the formal processes that lead to the formulation of a strategy that is to be implemented on corporate and/or business unit level. Crafting strategy is furthermore seen as a process that involves both top management and middle management. Finally, and most importantly for the purpose of this dissertation, strategy making is seen to involve both strategy process, and strategy content perspectives. Each conjecture is discussed in turn.

First, crafting strategy imaginatively, as it is seen in the present study, concerns the formal processes that lead to the formulation of a strategy that is then to be implemented, without considering the strategic change processes associated with such implementation. This conjecture assumes that it is actually possible to divide strategy formulation (or strategy making) and strategy implementation (or strategic/organizational change). Indeed, the division of these two concepts seems well established in the literature and can be traced back to three works in thinking about strategy: Alfred Chandler’s ‘Strategy and Structure’ (1962), Igor Ansoff’s ‘Corporate Strategy’ (1965), and Andrews’ ‘Business Policy: Text and Cases’ (1965). In the words of Andrews:

“Strategy has two equally important aspects, interrelated in life but separated to the extent practicable in our study of the concept. The first of these is formulation, the second implementation” (Andrews, 1965, cited in Rumelt, Schendel, and Teece, 1994: 20).

It should, however, be acknowledged that the distinction between formulation and implementation has not gone unchallenged. As Andrews suggests above, it is not clear whether it is made for rhetorical, analytic, or expository reasons. As a consequence, its sometimes-vague rationale has led a number of scholars to question the distinction between formulation and implementation in strategy making. At the heart of this argument was the idea that while it may be analytically convenient to separate the two concepts, their distinction is often difficult to reconcile with the reality of strategy-making processes (see, e.g. Hilb, 2001: 46; Rumelt, Schendel, and Teece, 1994: 20; Schendel, 1992: 2). Nevertheless, despite or because of this criticism, the distinction between formulation and implementation seems to have flourished since its inception in the 1960s and is also adopted for the purpose of the present dissertation.
dissertation acknowledges that, practically speaking the making of a strategy and its implementation are interdependent processes. However, in line with the established consensus in the literature (Learned et. al., 1965: 17), *crafting strategy, or the process by which a strategy is determined, is for analytical convenience seen as independent from the process of actually implementing this strategy.*

*Second*, an important question causing considerable confusion in the literature is from where and from whom strategies emerge in a company, i.e. where do strategy-making processes evolve? More recent conceptualizations are inconsistent with the traditional view that strategy making is the exclusive province of top management (Ansoff, 1965; Andrews et al., 1965, Schendel and Hofer, 1979). Mintzberg, for instance, challenged the traditional locus of strategy making and suggested that strategy making should be seen as a combination of deliberate and emergent decisions involving strategy makers from various levels of the organization (Mintzberg, 1978, 1994, Mintzberg and Waters, 1985, Mintzberg and McHugh, 1985). Most recently, Burgelman describes strategy making as a product of autonomous behavior located outside top management (Burgelman, 2002). Similarly, Wooldridge and Floyd have advocated strategy making ‘from the middle’ (Wooldrige and Floyd, 2001), and Hilb has suggested a ‘Matrioshka’ approach to strategy making, which systematically involves all organizational members (Hilb, 1995). Along the same lines Fredrickson observes:

> “Participation in the strategy-making process is not limited to a few individuals who are located at the very top of an organization” (Fredrickson, 1984, cited in Wooldridge and Floyd, 1990: 231).

Fredrickson (1984, and Mitchell, 1984), and later Wooldridge and Floyd (1990, 2001; Floyd and Wooldridge, 1996) have provided empirical evidence of the effects of the involvement of strategy makers who are not on corporate boards, but are middle managers. Most of these studies suggest that strategy making is located on two organizational levels, namely top management and middle management, and does not generally involve the entire organization. The strategy-making team, usually comprising two broad groups, namely middle and top managers (the CEO in particular), is generally seen as the focal point of this activity (Andrews, 1971). It should be appreciated that the conjecture that strategy making, while involving middle management, need not necessarily involve the entire organization, stands in contrast
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to strategy implementation or strategic change which, in fact, does seem to require that the entire organization be involved (e.g. Orgland, 1995; Schendel, 1992).

While the specific tasks in the strategy-making process seem to differ for the two broad groups of strategy makers (e.g. Thabur, 1998), research abundantly suggests that the key strategy makers in corporations are top management and middle management (Fredrickson, 1984, and Mitchell, 1984; Wooldridge and Floyd; 1990, 2001; Floyd and Wooldridge, 1996). Although strategy, at least in part, may emerge autonomously from the grass roots of an organization, it is the CEO and the strategy-making team’s stamp of approval that is seen as the referent for the organization’s strategy (in line with Szulanski and Doz, 1995: 19). This dissertation therefore views strategy making as a process that involves individuals from both top and middle management. In recognition of this stance, managers from both levels were interviewed in the empirical study.

A third and, for the purpose of this dissertation, most important aspect related to strategy making is the distinction between strategy process and strategy content research. The distinction between strategy process and content research seems to be as old as the concept of strategic management itself (Rumelt, Schendel, and Teece, 1994). The extant importance and sustained relevance of this distinction is suggested by the fact that no less than four special issues of the Strategic Management Journal were recently dedicated to strategy process and strategy content research. Similar to the division between strategy formulation and implementation, the distinction between process and content research is a contentious issue, which has not gone unchallenged. The distinction between process and content perspectives has been called an impediment to progress in the field of strategic management (e.g. by Schendel, 1992: 2), and the coincidence of process and content was advocated. At the heart of this stream of thought were the distinction’s artificial nature, and the notion that process should be studied alongside, or coincidentally with, content (e.g. Regner, 1999; Eisenhardt, and Zbracki, 1992). In another stream of thought, the distinction between the two was advocated particularly for because it facilitates teaching the field of strategy (see Schendel, 1992).

The objective here is not to reconcile this debate for strategic management in general, but to observe that in the case of strategy making in particular, assuming the coincidence of strategy process and strategy content is advantageous. It would appear
that in crafting strategy imaginatively it is decidedly difficult to focus exclusively on what strategic positions of the firm lead to optimal performance under varying environmental circumstances (the domain of content research), without simultaneously considering how (the domain of process research) a firm’s administrative systems and decision processes influence its strategic positions (see Chakravarthy and Doz, 1992: 5 for a related argument). This dissertation views strategy making as an effort involving both strategy process research (‘how’) and strategy content research (‘what’).

3.2.3. Strategy process research (How?)
Given the importance of strategy process and content research for this dissertation, each stream of thought is now explored. The present section discusses strategy process; the next section discusses strategy content.

Process research in strategic management is concerned with how effective strategies are shaped within the firm and then efficiently implemented (Pettigrew, 1992:6; Schendel, 1992:2; van de Ven, 1992: 169). Rich in perspectives, empirically complex, and paradigmatically diverse, the field of strategy process research appears very fragmented - which several scholars regret (e.g. Pettigrew, 1992: 5; Chakravarty and Doz, 1992: 5-7). According to the literature, the reason for this fragmentation could be strategy process’s drawing on a variety of disciplines, including organizational sociology, decision sciences, psychology, political science, and ethics (Chakravarty and Doz, 1992:7; Rumelt, Schendel and Teece, 1994: 24-40). Perhaps due to its broad discipline base, wide-ranging efforts have been undertaken to categorize this ‘crazy quilt of perspectives’ (Eisenhardt, and Zbaracki, 1992:17). The results were numerous, sometimes conflicting, categorization schemes, since authors delineated a multitude of ‘modes’ of strategy making, a stream of thought to which Henry Mintzberg is a prominent and prolific contributor (Mintzberg, 1978, 1994, and Waters, 1985, and McHugh, 1985; and Lampel, 1999).

Dissatisfaction with the individual categories of strategy making led other observers to rearrange these categories using quite different bases for differentiating the multiple schools of strategy process research (see especially Hart, 1991, 1992 for integrative frameworks). This added yet another layer of complexity: categorizations were now rearranged in meta-categorizations, few of which enjoyed empirical validation. In these exercises the question of whether such meta-categorizations were ‘simple’ (e.g.
Lumpkin and Dess, 1995), rather than ‘comprehensive’ (e.g. Fredrickson, 1984) seems to have been a key question. In an apparent response to this question, Mintzberg endeavored to expand his ‘modes of strategy making’ from the original ‘three modes’ (Mintzberg, 1973a, 1979), to ‘ten schools’ of strategy making (Mintzberg and Lampel, 1999).

At the heart of this conceptual confusion seems to reside the question of what is meant by the term ‘process.’ Indeed, a careful review of the numerous process frameworks that have been proposed in the literature shows that the term ‘process’ has been used in many different ways. Three meanings of process seem to be particularly prominent: first, process as a logic that explains a causal relationship between independent and dependent variables, second, as a category of concepts or variables that refers to actions of individuals or organizations, and third, as a sequence of events that describes how things change over time (van de Ven, 1992: 169-175).

The quest to clarify the term ‘process’ has consequently led to the interpretation of process as a sequence of events, or, put differently, as distinct steps of a given course that develops over time (see especially van de Ven’s seminal 1992 article). According to van de Ven, these steps can be interpreted as constituting a linear, circular, divergent, or convergent process. The bottom line is that strategy process research can best be understood in terms of a sequence of events that evolves over time, and comprises several steps (van de Ven, 1992). This interpretation of ‘process’ is adopted for the present dissertation. Overall, therefore, this dissertation proposes that strategy process research is primarily involved with delineating generic steps in a sequential course of action, such as

- envisaging,
- conceiving, and
- realizing imaginative strategies.

3.2.4. Strategy content research (What?)

The previous section focused on strategy process, the present section explores the fourth key concept underlying the theoretical framework: strategy content.

Content research in strategic management is concerned with what is decided in a corporate setting (Rumelt, Schendel, and Teece, 1994: 18-20; Fahey and Christensen,
Crafting strategy imaginatively

1986: 167; Schendel, 1991: 1). Whereas strategy process primarily dominated research agendas from the 1960s to the 1980s, in the last two decades strategy content research has contributed significantly to the development of the strategic management field (Eisenhardt, and Zbaracki, 1992; Huff and Reger, 1987). Strategy content research does not seem as paradigmatically diverse and fragmented as strategy process research. Essentially strategy content research appears to have provided three distinct explanations in regard to strategy making: first, the Porterian industry structure view (also called ‘industrial organization view’), second, the resource-based view, and a third, emerging, perspective can be delineated: dynamic interpretations of resource positions (also called ‘challenging imagination,’ e.g. Roos and Victor, 1999). This third perspective is relatively new and has been developing as an outgrowth of the resource-based view in that it represents the latter’s extension into dynamic markets (e.g. Teece, Pisano, and Shuen, 1997). The three perspectives will be discussed in turn.

First, strategy content theories based on the industrial organization view (Mason, 1939; Bain, 1956) explain how companies use reductions in competition in order to strengthen their positions (Schendel, 1988; Montgomery, 1988). Porter (1980) translated the concepts of industrial organization economics into the strategy field, and developed a general, cross-sectional framework for explaining individual firm performance. Due to the prominence of Porter’s work in this stream of research, it was often called the ‘Porterian view.’ Porter’s work can be seen as turning classical industrial organization economics on its head: traditionally the role of industrial organization economics had been to identify socially wasteful sources of ‘monopoly’ profits, but Porter used the framework to develop strategies to appropriate abnormal returns which would lead to a competitive advantage for firms (Rumelt, Schendel, and Teece, 1994: 22-23). Building on and extending agency theory, evolutionary economics and, more recently, game theoretic approaches, industrial organization perspectives have recently been referred to as ‘descriptive imagination’ in that they primarily focus on elucidating and apprehending the environment of the firm (Rumelt, Schendel, and Teece, 1991, 1994; Nalebuff and Brandenburger, 1996). The perceived need to ‘see’ and describe five industry forces is a manifestation of the descriptive nature of this stream of thought (Roos and Victor, 1999: 349) which focused on the industry ‘out there’ as a source of variation, rather than on the firm itself. Indeed, firm

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4 This notion of descriptive imagination should not be confused with the normative/descriptive distinction made in the objective of this dissertation, see section 2 in this chapter.
and resource homogeneity was assumed. This is in sharp contrast to the heterogeneity of firms and their resource endowments associated with the second explanation for strategy making provided by content research, namely the resource-based view.

Second, the resource-based view, similarly to the industrial organization view, has been highly influenced by economic theory. The sub-field of transaction cost economics; developed primarily by Williamson (1975, 1985) building on Coase's seminal work (1937) was principally used as the conceptual backdrop to this approach to strategy. The focus here is on costs of transactions and suitable structures for conducting such transactions, i.e. markets or hierarchies, the reasoning being that uncertainty, idiosyncratic firm resources, and opportunistic behavior lead to inefficient or unfair market prices and that firms result as a consequence of this market failure (e.g. Rumelt, Schendel, and Teece, 1991, 1994; Schendel, 1988; Schendel, 1991). The resource-based perspective of the firm furthermore builds strongly on Penrose’s (1959) notion that firm-specific resources and capabilities, rather than industry positions, determine the direction and growth of the firm. In emphasizing firm-specific resources, this perspective is interested in delineating tools and mechanisms that can be utilized to take advantage of the most critical of firm resources (Rumelt, 1984, 1987, 1991; Wernerfelt, 1984, 1995; Barney, 1991; Prahalad and Hamel, 1990; Nelson and Winter, 1982). Knowledge resources in particular seem to be critically associated with firm success (e.g. Spender, 1996a,b; Grant, 1996, 1997; Nonaka, 1994, and Takeuchi, 1995; Kogut and Zander, 1996). Resource-based perspectives have recently been described as ‘creative imagination’ in that they focus on how resource and capability endowments are created and sustained over time (Roos and Victor, 1999).

The third perspective, often called ‘dynamic capabilities,’ can be seen as an outgrowth of the resource-based view (Teece, Pisano, and Shuen, 1997: 515). To illustrate: a problem faced by the resource-based view is path dependency, which suggests that a firm’s previous investments in managing and creating resources constrain its behavior and the strategic options available for investing in, and managing new resources (e.g. Dierckx and Cool, 1989; Leonard-Barton, 1992, 1995). This observation has apparently led to ‘dynamic’ interpretations of the resource-based view (see Teece, Pisano and Shuen, 1997, for their pioneering contribution). Variously referred to as ‘strategy innovation’ (e.g. Hamel, 2000), ‘value innovation’ (e.g. Kim and Mauborgne, 1999a), or ‘dynamic capabilities’ (e.g. Teece, Pisano, and Shuen, 1997; Eisenhardt and Martin, 2000; Zott, 2000), these interpretations appear in
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their own right to have established themselves as a third sub-field in the most recent strategy content debate. In this emerging stream of thought writers such as Gary Hamel, Johan Roos, and Kathleen Eisenhardt, typically drawing on complexity theory (e.g. Allison and Kelly, 1999; Bar-Yam, 1997; Kauffman, 1993, 1995), challenge the established logic of doing business, and advocate questioning and re-drawing the boundaries of industries and businesses. It has therefore also been labeled the ‘challenging imagination’ approach to strategy content (Roos and Victor, 1999: 350).

Thus, from the above analysis, three main approaches to strategy content can be deduced from the extant literature. Likewise this dissertation sees strategy content research as primarily concerned with three sub-fields:

- industrial organization perspectives (which this dissertation calls ‘descriptive imagination’),
- resource-based perspectives (‘creative imagination’), and
- dynamic capability perspectives (‘challenging imagination’).

To summarize, the present section delimited the scope of analysis on two levels of abstraction. First, the scientific approach in terms of ontology, epistemology, and methodology was discussed. Second, the four key concepts on which the theoretical framework is based were defined. The next, and final, subsection of this introductory chapter provides the structural approach adopted to pursue the research objective of this dissertation.

4. The structure of the dissertation

For expository purposes, this dissertation is structured in four main chapters.

The introductory chapter 1 has so far outlined the theoretical and practical backgrounds to the problem that motivated this dissertation. Subsequently, the objective, and the approach adopted to pursue this objective were given. Particular emphasis was placed on a definition of the key concepts that underlie the theoretical framework for crafting strategy imaginatively as developed in this dissertation. The construction of this theoretical framework for crafting strategy imaginatively is the subject of the theoretical part.
Chapter 2 constitutes the theoretical part of this dissertation, in which the theoretical argument is developed and formalized. To this end a framework is built integrating prior work emanating from strategy process and strategy content research realms. This framework, the strategy-making matrix, has been systematically deduced from an internally consistent theoretical perspective, based on the two main literatures in strategy: strategy process research and strategy content research. Strategy process research provides the three generic steps for the strategy-making process, which this dissertation calls: envisaging, conceiving, and realizing. Strategy content research provides three basic thrusts of strategy making, which this dissertation calls: descriptive, creative, and challenging imagination. Juxtaposing the three generic steps in the strategy-making process with the three basic thrusts of strategy making in a matrix format yields this dissertation’s theoretical framework, a three-by-three matrix. Earlier frameworks associated with each of the three basic thrusts of strategy making are critically discussed. Based on this discussion, a comprehensive three-step framework for envisaging, conceiving, and realizing imaginative strategies can be developed that builds on the strengths of earlier frameworks, while attempting to eliminate their weaknesses. Chapter 2 concludes with key implications for the empirical part.

Chapter 3 constitutes the empirical part of this dissertation. It revisits the theoretical framework with the objective of empirically examining the logic and soundness of its constituent propositions, and of refining them in the light of empirical evidence. For ease of exposition and for readers’ convenience, the empirical part is a ‘mirror image’ of the strategy-making matrix. To illustrate, the three generic steps of strategy making (envisaging, conceiving, and realizing) and the three basic thrusts of strategy making (descriptive, creative, and challenging imagination), are systematically subjected to empirical appraisal. The research methodology adopted for this exercise is the single-embedded case study. Particular attention is devoted to the provision of a rationale for the adoption of this specific method, its limitations, and strategies taken to ensure validity and reliability of the research findings. Thus, while the theoretical validity of the strategy-making matrix was the topic of the previous chapter, chapter 3 focuses on ascertaining the empirical validity of the framework built. A summary of the major findings of the empirical study concludes this chapter and lays the foundation for the overall conclusions and implications of this dissertation that follow in the final part.
Chapter 4 constitutes the concluding part. Its objective is to outline the main theoretical and practical insights that were gained throughout the entire analysis in a condensed format. For this purpose the principal conclusions that could be gained in terms of the research objective of the present dissertation are given first. Subsequently, the dissertation’s overall contributions are discussed, and recognition of its limitations is provided. Finally, chapter 4 provides the implications for the development of the literatures on which the theoretical framework is based, and discusses the implications for business practice.
Chapter Two: Theoretical Framework

1. Blueprint for the proposed framework

This chapter attempts to develop and formalize the theoretical argument in two steps.

In the first step it is argued that crafting strategy imaginatively needs to consider both the strategy process (how) as well as the strategy content (what) perspectives. As discussed in the section delineating the key concepts (chapter 1), it would appear that in crafting strategy imaginatively it is decidedly difficult to focus exclusively on what strategic positions of the firm lead to optimal performance under varying environmental circumstances, without simultaneously considering how a firm’s administrative systems and decision processes influence these strategic positions (Chakravarthy and Doz, 1992; Rumelt, Schendel, and Teece, 1994; Schendel, 1992). The main point of departure of the theoretical argument is therefore the conjecture that crafting strategy imaginatively is an effort involving both strategy process research and strategy content research.

In the second step, the interface between strategy process and content research is systematically explored, and the resulting propositions are formalized. This dissertation’s conceptual framework graphically acknowledges the interdependence of strategy process and strategy content research in strategy making by juxtaposing them in a matrix format. To illustrate: the two streams of research can be thought of as the two dimensions of a matrix where the horizontal axis describes how a strategy is made and the vertical axis describes what is being imagined when crafting strategy.

The strategy-making matrix consequently juxtaposes two distinctions that have often been made, but that, to the author’s knowledge, have not as yet been systematically analyzed in conjunction.

- This dissertation sees the question of how a strategy is made as a sequential process involving a number of process steps (see van de Ven, 1992, as well as Schendel and Hofer, 1979 for related arguments). On the horizontal axis, therefore, the strategy-making matrix argues that crafting strategy imaginatively can usefully be conceptualized as a process involving the three generic steps in the strategy-making process: envisaging, conceiving, and realizing strategies.
This dissertation further sees what is decided in this process as contingent upon an important source of such decisions: the human imagination (see Roos and Victor, 1999; Kearney, 1988). On the vertical axis, therefore, the strategy-making matrix argues that imaginative strategies can best be envisaged, conceived, and realized by considering all three thrusts of strategy making: descriptive, creative, and challenging imagination.

The juxtaposition of the three generic steps of the strategy-making process with the three basic thrusts of strategy making yields a three by three matrix (Figure 1). As will be discussed, each of the nine boxes of the matrix hosts what this dissertation calls three ‘strategic imagination levers,’ which seek to unleash the imagination of the strategy maker.

Figure 1: A blueprint for the strategy-making matrix (source: author).
Theoretical Framework

The strategy-making matrix is based on the key concepts defined in chapter 1. The three generic steps in the strategy-making process (envisaging, conceiving, and realizing) are based on strategy process literature, and they are the topic of the next section. Thereafter follow sections on the delineation and explication of the three basic thrusts in strategy making (descriptive, creative, and challenging imagination), which are based on strategy content literature.

1.1. Three generic steps in the strategy-making process (how)

The three generic steps in the strategy-making process (envisaging, conceiving, and realizing) were derived from a review of existing work in the strategy process realm. Process research in strategic management is concerned with how effective strategies are shaped within the firm and how they are then efficiently implemented (Pettigrew, 1992:6; Schendel, 1992:2; van de Ven, 1992:169; Chakravarty and Doz, 1992:5-7). As discussed in the section delineating the key concepts (chapter 1: Strategy process research (How?), strategy process research is very rich in perspectives, as well as being empirically complex, and paradigmatically diverse.

Dissatisfaction with strategy process research’s ‘crazy quilt of perspectives’ (Eisenhardt, and Zbaracki, 1992:17) has lead researchers to construct different categorization schemes for delineating modes, and archetypes of the strategy process (e.g. Mintzberg, 1978, 1994, Mintzberg and Waters, 1985, Mintzberg and McHugh, 1985; Hart, 1991, 1992). Candidate frameworks were invariably countered by the empirical questioning of their underlying assumptions and limited explanatory power. This questioning rejected the rational explanations of strategy making, portraying it instead as satisficing, incremental and distorted by partisan influences (e.g. Szulanski and Doz, 1995). The essence of this seems to be the quest to define what is meant by ‘process.’ In a most influential article van de Ven discovered that, three different usages of ‘process’ are salient: first, process as a logic that explains a causal relationship between independent and dependent variables; second, process as a category of concepts or variables that refers to actions of individuals or organizations; and third, process as a sequence of events that describes how things change over time (van de Ven, 1992:169-175). Below, each of these three different usages is discussed.

According to the literature, process as a logic that explains a causal relationship between independent and dependent variables can be thought of as an input-output process model that serves to explain the relationship between observed inputs
Crafting strategy imaginatively

(independent variables), and outputs (dependent variables) in variance theory (Mohr, cited in van de Ven, 1992). In this usage, process is not directly observed. Instead a process theory is used as a tool for explaining how and why an independent (input) variable exerts an influence on a dependent (outcome) variable (van de Ven, 1992: 170). To illustrate: most studies that investigate the relationship between business performance and strategy-making processes fall into this category. Empirical investigations, however, have often provided equivocal evidence. For example, Fredrickson (1984) and Fredrickson and Mitchell (1984) discovered that comprehensiveness in strategic decision-making processes is positively related to performance. Eisenhardt (1989) validated this conjecture. However, Lumpkin and Dess (1995) and later Thakur (1998) found contradictory evidence. Van de Ven and Huber (1990) and van de Ven (1992) argue that the root-cause of these variations is that causation in these studies is often explained using highly restrictive and unrealistic assumptions. They therefore conclude that the interpretation of ‘process’ as a causal relationship is sub-optimal.

Process as a *category of concepts of individual and organizational actions* can be seen as the second frequently-used interpretation. According to van de Ven, communication frequency, workflows, decision-making techniques, as well as strategy formulation, implementation and corporate venturing all belong to this category. In this usage, process refers to a category of concepts that are operationalized as constructs, and measured as fixed entities (i.e. variables), the attributes of which can vary on scales from low to high (van de Ven, 1992: 170). To illustrate: studies that examine how strategy-making processes influence executive understanding of cause-effect relationships involving the firm and its environment would belong to this category. Examples include scanning, analysis, and planning as methods to aid decision-making processes about the firm’s alignment with its environment. However, according to van de Ven such processes are again not directly examined. Instead process constructs are represented as entities or attributes of reality and therefore only allow the researcher to measure if, and not how a change occurred in a variable measured at different points in time (Abott, 1988, cited in van de Ven, 1992). This limitation leads van de Ven to dismiss the interpretation of process as a category of concepts as well.

The third, and according to van de Ven, the least understood interpretation of process, is process as a *sequence of events* or activities that describes how things change over
time. This is, therefore, the most opportune interpretation of process for the purpose of this dissertation. Whereas the second definition of process examines changes in variables over time, the third definition of process takes a historical developmental perspective and focuses on the sequences of incidents, activities, and stages that unfold over time (van de Ven, 1992: 170). Very recently prominent strategy process researcher Henry Mintzberg who is well-known for first categorizing strategy process research in three modes of strategy making (Mintzberg, 1973a), and later in ‘ten schools’ of strategy making, also suggested that the ‘ten schools’ can be usefully conceptualized as steps in a sequence of events that evolves over time (Mintzberg and Lampel, 1999). Indeed, the best-established developmental process frameworks pertaining to strategic decision-making can be seen as belonging to this third interpretation of process (e.g. Mintzberg, Raisighani, and Thoret, 1976; Cohen, March and Olsen, 1972; Quinn, 1980; Mintzberg and Lampel, 1999; Lorange, 1980). Several approaches were used in these studies to infer the phases or steps in a process, including company historical self-reports or categorizing clusters of companies into a certain number of stages or phases (van de Ven, 1992: 172).

Van de Ven and Mintzberg’s succinct advocacy of the third interpretation of process is adopted in this dissertation, not least because interpreting ‘process’ as a sequence of a certain number of steps that evolve over time seems intuitively and etymologically appealing. Therefore, this dissertation views ‘process’ as a sequence of steps that unfolds over time. More specifically, this dissertation argues that for reasons of ease of conceptualization, and to facilitate practical applicability, strategy-making processes can best be conceptualized using three generic steps, which dissertation calls envisaging, conceiving, and realizing strategies. The three generic steps in the strategy-making process are based on an extensive analysis of the most prominent strategy process frameworks. For ease of exposition, this analysis is presented in a tabular format. Table 1 provides a careful selection of major process frameworks, and demonstrates how the individual steps in these frameworks can best be described using the three generic steps envisaging, conceiving, and realizing.

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5 Process is derived from the Latin ‘procedere’ to walk forward.
Table 1: The three generic steps of strategy making (source: author).

<table>
<thead>
<tr>
<th>Authors and synopses of findings</th>
<th>Stages or steps in the strategy formulation process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasser and Vivier (1995)</td>
<td>1. Engage the market, understand the future, create value for the customer, calculate the risk, then pre-empt: <em>envisaging</em> strategies</td>
</tr>
<tr>
<td>• Case studies of South African corporations gearing themselves for global competitiveness under the post-apartheid government</td>
<td>2. Mobilizing capability, defy the old paradigms, focus on speed, simplicity and self-confidence, create obsession for perpetual renewal: <em>conceive</em> or <em>realize</em> strategies</td>
</tr>
<tr>
<td></td>
<td>3. Energizing the organization, nurture competitive angst, inspire with pack leadership, manage through creative tension: <em>realize</em> or <em>conceive</em> strategies</td>
</tr>
<tr>
<td>• Studies different types of strategy-making process capabilities in a sample of 285 top managers</td>
<td>2. Produce a corporate mission and vision using symbols: <em>envisage</em> strategy</td>
</tr>
<tr>
<td></td>
<td>3. Solidify position achieved, defend: <em>conceive</em> strategy</td>
</tr>
<tr>
<td></td>
<td>4. Continuously improve to realize strategic fit: <em>realize</em> strategies</td>
</tr>
<tr>
<td></td>
<td>5. Nurture capability for continuous innovation: <em>realize</em> strategies</td>
</tr>
<tr>
<td>Mintzberg Raisinghani &amp; Theoret (1976)</td>
<td>1. Identification phase, decision recognition, diagnosis routine: <em>envisage</em> strategy</td>
</tr>
<tr>
<td>• Field study of 25 strategic, unstructured decision processes</td>
<td>2. Developmental phase, search routines, and design strategic routines: <em>conceiving</em> strategy</td>
</tr>
<tr>
<td></td>
<td>3. Selection phase, screen routines, establish evaluation-choice routines: <em>realize</em> strategies</td>
</tr>
<tr>
<td>Gluck, Kaufmann &amp; Walleck (1980)</td>
<td>1. Basic financial planning, meet budget: <em>envisaging</em> strategy within financial constraints</td>
</tr>
<tr>
<td>• Investigation of planning and control systems</td>
<td>2. Forecast-based planning, predict the future: <em>conceiving</em> strategy</td>
</tr>
<tr>
<td></td>
<td>3. Externally oriented planning, think strategically: <em>realize</em> strategy</td>
</tr>
<tr>
<td></td>
<td>4. Strategic management, create the future: <em>realize</em> strategies</td>
</tr>
</tbody>
</table>
Table 1: The three generic steps of strategy making (continued).

<table>
<thead>
<tr>
<th>Authors and synopses of findings</th>
<th>Stages or steps in the strategy formulation process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mintzberg and Lampel (1999)</strong></td>
<td>1. Analyze, learn from past, then position: <em>envisaging</em> the strategy</td>
</tr>
<tr>
<td>• Meta-analysis of the last 30 years of process research</td>
<td>2. Plan, implement, and execute: <em>conceive</em> envisaged strategy</td>
</tr>
<tr>
<td>• 3. Realize entrepreneurial spirit, learn and adapt: <em>realizing</em> imaginative strategies</td>
<td></td>
</tr>
<tr>
<td><strong>Lorange (1980)</strong></td>
<td>1. Setting objectives by evaluating relevant strategic alternatives: <em>envisage</em> strategy</td>
</tr>
<tr>
<td>• Normative framework of corporate strategic management</td>
<td>2. Strategic programming, develop programs for achieving chosen objectives: <em>conceive</em> strategy</td>
</tr>
<tr>
<td>• 3. Budgeting, establish detailed action program for near-term: <em>conceive</em> strategy</td>
<td></td>
</tr>
<tr>
<td>• 4. Monitoring, measure progress toward achieving strategies: <em>realizing</em> strategies</td>
<td></td>
</tr>
<tr>
<td>• 5. Rewards, establish incentives to motivate goal achievement: <em>realizing</em> strategies</td>
<td></td>
</tr>
<tr>
<td><strong>Quinn (1980)</strong></td>
<td>1. Sense need, develop awareness and understanding: <em>envisage</em> strategy</td>
</tr>
<tr>
<td>• Cross case analysis of nine corporations</td>
<td>2. Develop partial solutions: <em>conceive</em> strategies</td>
</tr>
<tr>
<td>• 3. Build consensus, increase support: <em>conceive</em> strategy</td>
<td></td>
</tr>
<tr>
<td>• 4. Sustain formal commitment: <em>realize</em> strategies</td>
<td></td>
</tr>
<tr>
<td><strong>Lyles (2001)</strong></td>
<td>1. Understanding strategic alternatives, delineating types of alternatives, developing alternatives: <em>envisaging</em> strategy</td>
</tr>
<tr>
<td>• Inductive cross-case analysis of major multinationals, development of a strategic decision-making framework</td>
<td>2. Generate alternatives, focus on obvious, creative, and unthinkable alternatives, instill capacity for relentless alternative generation: <em>conceive</em> strategies</td>
</tr>
<tr>
<td>• 3. Nurture organizational processes to aid alternative generation on a sustained basis: <em>realizing</em> strategies</td>
<td></td>
</tr>
<tr>
<td><strong>Eisenstat and Beer (1994)</strong></td>
<td>1. Develop a partnership with organization members: <em>conceiving</em> strategies</td>
</tr>
<tr>
<td>• Cross-case analysis of US American corporation’s development of a framework for aligning the organization with strategy</td>
<td>2. Assess the organization’s capability to implement strategy: <em>envisaging</em> or <em>conceiving</em> strategy</td>
</tr>
<tr>
<td>• 3. Orchestrate strategic initiatives that will realign the organization with its business strategy so as to stimulate learning and to build and sustain commitment: <em>realizing</em> strategies</td>
<td></td>
</tr>
</tbody>
</table>
The selection of the frameworks in Table 1 was made on two grounds. First, predicated on an extensive literature review, the frameworks represent the most prominent and/or most sophisticated approaches to strategy-making process research. Furthermore, as the synopses in Table 1 illustrate, the frameworks chosen to illustrate the three generic steps in the strategy-making process all enjoyed extensive empirical validation, often drawing on evidence from various industries. In addition to these frameworks, several strategy process frameworks were reviewed, but not included in Table 1. Consistent with the conjecture that strategy ‘process’ can best be thought of as a sequence of events, two categories of frameworks were reviewed, but not included in this dissertation. The first approach looked at ‘process’ either as a logic that explains causal relationships. The second approach adopted the perspective of process as a category of concepts. The literature argues that both interpretations of process are flawed (van de Ven, 1992), hence frameworks adopting this interpretation were not considered for inclusion in Table 1.

An evaluation of the similarities and differences between the frameworks in Table 1 suggests that while all view the strategy-making process as a sequence of events, this sequence involves a heterogeneous number of steps. To illustrate: Lorange (1980) uses five steps, whereas many other frameworks, including those that are most established (particularly Mintzberg’s), use three generic steps. While terminology differs across the authors reviewed in Table 1, it is evident that all authors implicitly adopt the generic three steps in the strategy-making process that this dissertation also proposes, namely envisaging, conceiving, and realizing strategies. Therefore, based on an extensive literature review, the following conceptualizations of the three generic steps are proposed:

- **Envisaging** strategies constitutes the first generic step in strategy making. This step comprises determining the agenda with issues that are currently recognized as strategic at corporate or business unit level. Table 1 suggests that strategic issues are defined as events, developments or trends that are potentially important for the future development of the organization (Mintzberg and Quinn, 1991; and Goshal, 1995; Chakravarthy and Lorange, 1991). According to Mintzberg, conceiving strategies are first and foremost about developing a plan – some sort of consciously intended course of action, a guideline (or set of guidelines) to deal with a situation. By this definition, strategies have two essential characteristics: they are made in advance of the
Crafting strategy imaginatively

actions to which they apply and they are developed consciously and purposefully (Mintzberg, Quinn, and Goshal, 1995: 13). To illustrate: the first generic step in strategy making is about determining objectives, i.e. to determine a strategic direction for the firm and its divisions and business environments. An example of an objective would be General Electric’s intent to be the primary contender in markets in which it competes (Chakravarty and Lorance, 1991: 4).

- **Conceiving** strategies forms the second generic step in strategy making, logically following the envisaging of strategies. Table 1 suggests that if strategies are envisaged, they can also be conceived. In other words, envisaging a strategy is not sufficient; a concept is needed that encompasses the resulting behavior (Mintzberg, Quinn, and Goshal, 1995: 14). To illustrate: conceiving strategies comprises the different functions of the organization necessary to produce output, i.e. products or services in one or more businesses (Chakravarty and Lorance, 1991). It should be appreciated that the adjective ‘conceived’ indicates that the activities comprise only those activities that could actually be carried out (Mintzberg and Waters, 1985: 270). It should furthermore be appreciated that conceiving strategies is very different from implementing strategies, which is not the focus of this dissertation (chapter 1: Definitions of key concepts). For example, Table 1 indicates that conceiving strategies encompasses activities such as assessing the organization’s capability to implement strategy (Eisenstat and Beer, 1994; Beer and Nohria, 2001), evaluating strategic alternatives (Lyles, 1994), budgeting and establishing action programs (Lorance, 1980). Thus, while envisaging strategies focuses on the intellectual processes of ascertaining what a company might do, conceiving strategies focuses on deciding what a company can do, and bringing these considerations together in optimal equilibrium (Mintzberg, Quinn, Goshal, 1995: 57).

- **Realizing** strategies is a particularly daunting task in situations in which the business landscape is neither stable nor predictable (Lissack and Roos, 1999, 2001). Table 1 indicates that realizing strategies is closely related to ‘organizational learning’ (Senge, 1990; von Krogh and Vicari, 1993). It encompasses ‘nurturing capability for continuous innovation’ (Lyles, 1994; Hart, 1991), ‘energizing the organization’ (Nasser and Vivier, 1995);
‘sustaining formal commitment’ (Quinn, 1980), and ‘maintaining an entrepreneurial spirit’ (Mintzberg and Lampel, 1999). To illustrate: realizing imaginative strategies is about ensuring competitiveness over time. In particular, it is about ascertaining that the competitive environment and strategy do not develop in different directions. The latter is a phenomenon Johnson (1988) called ‘strategic drift’ (see also Quinn, 1980). According to Johnson’s accepted view, organizations should have formal mechanisms in place to prevent such strategic drift. Realizing strategies can therefore be seen as the logical step following the conception of a given strategy. It constitutes a feedback loop and its primary purpose is monitoring, control and learning (Chakravarthy and Lorange, 1991: 6).

Thus, based on Table 1, three generic steps in strategy making can be delineated. These form a logical sequence of events that unfolds over time (van de Ven, 1992). However, it must be emphasized that, as suggested by the third generic step, the sequence of the three steps in crafting strategy is not linear; “in practice, [they] are interactive, recycle and repeat themselves and do not move forward in sequence” (Schendel and Hofer, 1979: 14). The cyclic logic of the three generic steps in the strategy-making matrix is illustrated in Figure 2 below.
Overall, the evaluation of the similarities and differences between the frameworks in Table 1 has revealed the promise of thinking of strategy making as a process involving three generic steps that evolve over time in a cyclic manner as depicted in Figure 2. An evaluation of the strengths and weaknesses of the frameworks in Table 1, suggests that while the frameworks have furthered our understanding of the strategy process considerably, and while all frameworks reviewed are based on extensive empirical work, they only seem to focus on the question of ‘how’ strategies are crafted. However, it would seem to be decidedly difficult to focus exclusively on how (strategy process) a firm’s administrative systems and decision processes influence its strategic positions, without simultaneously considering what strategic positions of the firm lead to optimal performance under varying environmental circumstances (strategy content). It is particularly disadvantageous that none of the frameworks reviewed considers the three fundamental types of imagination, or as this dissertation has termed them, the three basic thrusts in strategy making (descriptive, creative, and challenging imagination). These are the focus of the next subsection.
Theoretical Framework

1.2. Three basic thrusts in the strategy-making process (what)

The three basic *thrusts for strategy making* have been derived from an extensive review of existing work in the strategy content realm. Content research in strategic management is concerned with what is decided in a corporate setting (Rumelt, Schendel, and Teece, 1994: 18-20; Fahey and Christensen, 1986: 167; Schendel, 1991: 1).

The *purpose of this section* is to conceptualize these three main perspectives as three forms of imagination or, as this dissertation calls it, the three thrusts of strategy making. As discussed in the section delineating the key concepts (chapter 1), strategy content research is not as paradigmatically diverse and fragmented as strategy process research. Upon analysis, strategy content research has provided three distinct explanations, the first is the industrial organization view, and the second is the resource-based view. A third, emerging, perspective can be delineated: the ‘strategy innovation’ perspective. It is developing as an outgrowth of the resource-based view in that it represents the resource-based view’s extension to dynamic markets.

A careful review of the strategy content literature reveals that the essential quality of a strategy is its originality, since originality allows a firm to outperform its rivals (Roos and Victor, 1999). Originality can take the form of a first-mover advantage, a unique position in the market, a unique bundle of resources, or a unique dynamic capability (e.g. Eisenhardt and Martin, 2001; Zott, 2001). If that originality is hard to imitate (Barney, 1991, Wernerfelt, 1984), and is uniquely suited to external competitive positions (Porter, 1980, 1985, 1998, 2001), a strategy can confer lasting competitive advantage. Conversely, without originality a strategy is a mere commodity, and not conducive to conferring and sustaining competitive advantage (Roos and Victor, 1999). However, recent work has found a persistent lack of originality in contemporary strategies (Hamel, 2000; Eisenhardt and Galunic, 2001; Eisenhardt, and Martin, 2000; Lissack and Roos, 2001; Szulanski and Amin, 2001; Szulanski and Doz, 1995). According to Lissack and Roos, the fact that a key ingredient in strategy making, namely imagination, is lacking in contemporary strategies is fundamental to this issue (Roos and Victor, 1999: 349).

Given its criticality for crafting strategy, imagination itself therefore warrants deeper attention. The term ‘imagination’ has been given many different cultural and linguistic connotations (see, e.g. Kearney, 1988). As two prominent strategy scholars have
Crafting strategy imaginatively

recently argued, while all share the basic idea that humans have a unique ability to ‘image’ or ‘imagine’ something, the variety of uses of the term ‘imagination’ implies not one, but at least three meanings (Roos and Victor, 1999; drawing on Kearney, 1988):

- to describe,
- to create, and
- to challenge.

In line with this view, the present dissertation proposes that these three imaginations are ideally suited for categorizing extant strategy content literature. As was discussed in the section defining the dissertation’s key concepts (chapter 1), the strategy content literature can also be thought of as encompassing three main sub-fields of inquiry: the industrial organization, resource-based, and dynamic capabilities perspectives, corresponding to the three forms of imagination.

The parallelism between the three streams of thought within the strategy content literature and the three imaginations is striking. To illustrate: industrial organization perspectives seek to ‘describe’ the environment of the firm. This perspective’s perceived need to describe five industry forces represents a manifestation of the descriptive nature of this stream of thought (Porter, 1980, 1985). Similarly, resource-based perspectives can be usefully conceptualized as ‘creative’ in that they focus on how resource and capability endowments are ‘created’ over time (Hamel and Prahalad, 1994a, Barney, 1991; Prahalad and Hamel, 1990; Peteraf, 1993; Wernerfelt, 1984). Analogously, dynamic capability perspectives can be usefully seen as ‘challenging’ in that they urge us to “break out of old paradigms, challenge received dogmas” (Hamel and Prahalad, 1996: 242). Since the three imaginations in strategy making are fundamental to this dissertation, a definition of each follows.

- Social science literature depicts descriptive imagination as the mind’s evoking of a new understanding of a complex world. It seeks to identify patterns; finds and labels discovered regularities in order to reduce the complexity of the world ‘out there.’ It can therefore be seen as essentially preoccupied with describing the world (Roos and Victor, 1998: 5-6). The recognition of a desire to describe the world is equally prevalent in the strategic management literature. Porter (1980), for instance, advocated that the need to describe the
outside world in terms of industry structure and dynamics was the essence of strategy. Descriptive imagination is intrinsic in many frameworks and tools of the industrial organization view in strategic management. The literature recommends a variety of techniques to stimulate descriptive imagination through rigorous and systematic diagnostics that facilitate the diagramming and profiling of the competitive environment, with the ultimate aim of creating increasingly precise descriptions. Popular examples include value chains, Du Pont frameworks, and growth share matrices (see Roos and Victor, 1998: 6-10).

- **Creative imagination** is conceptualized in the social science literature as the mind’s invention of an idea that is new to the world, and it was often confused with the definition of imagination itself, namely creativity. However, as this dissertation, in line with Kearney, argues, creative imagination can be seen as only one of three constituents of imagination (Kearney, 1988: 18). It seeks to evoke new possibilities through the combination, recombination or transformation of things or concepts” (Weick, 1979, cited in Roos and Victor, 1999). The recognition of the need to create ideas that are new to the world is equally prevalent in the resource-based view in strategic management. Creative imagination occupies a central role in many activities such as ‘creating new competitive space’ (Hamel and Prahalad, 1994a); ‘strategy as stretch and leverage’ (Hamel and Prahalad, 1993); and creatively shaping, rather than accepting industry conditions (Hamel, 1996).

- **Challenging imagination** is described as the mind’s negation of what it describes or creates, i.e. of the previous two imaginations. According to the social science literature, it is typically sardonic, and evokes a deconstruction of things or concepts previously held. Challenging imagination contradicts, defames, and destroys the clarity generated by description and the sense of progress that comes from creativity (Kearney, 1988). As the defining characteristic of postmodern thought (Lyotard, 1984; Derrida, 1981, 1988), Foucault called challenging imagination the ‘shattering truth’ (see Cilliers, 1998). The recognition of the need to challenge existing descriptions and creations is particularly relevant to the extant, dynamic business environment, and it comes as no surprise that the strategy content literature has eagerly adopted the idea of challenging imagination. Concepts such as challenging of
‘core rigidities’ (Leonard-Barton, 1992, 1995); and ‘industry revolution’ (Hamel, 1996) bear witness to this exceedingly modern form of imagination in crafting strategy.

Following Kearney (1988), this dissertation takes the stance that each of the three imaginations above plays an indispensable and complementary role in the making of a strategy. This dissertation therefore proposes that crafting strategy imaginatively can be seen as reliant on the complex interplay of all three imaginations. As will be discussed in the next section, each of the three imaginations, while indispensable, suffers from a downside that demands the consideration of the other two.

Overall, this dissertation exploits the similarity between the three streams of thought in the strategy content literature and the three imaginations to deduce the three basic thrusts of strategy making. The following three sections discuss extant frameworks and conceptual aids associated with each of the three imaginations in greater depth. Based on an analysis of the respective similarities or differences and strengths or weaknesses of frameworks associated with each imagination, a ‘new’ integrated framework for envisaging, conceiving, and realizing imaginative that considers all three imaginations strategies will be systematically built in the remaining pages of the theoretical part.

2. Existing frameworks for crafting strategy imaginatively

To learn more about imagination in strategy making, this section reviews exemplary frameworks of descriptive, creative, and challenging imagination. Towards the end of the section the frameworks are critically analyzed in a joint manner.

2.1. Major frameworks associated with descriptive imagination

The previous section introduced the overall logic of the strategy-making matrix, and deduced the three basic thrusts in strategy making. This section discusses one of the three basic thrusts of strategy making: descriptive imagination.

Until the 1980s the dominant strategy-making paradigm had focused on describing companies’ environments (Spender, 1996; Nanda, 1996; Belohlav, 1996; Teece, Pisano and Shuen, 1997). The paradigm viewed the essence of strategy making as “relating a company to its environment. The key aspect of a firm’s environment is the
industry or industries in which it competes” (Porter, 1980: 4). The classic idea underlying this type of imagination is the ‘mimetic impulse’ (Roos, personal communication, June 2000) to mirror the world in increasingly precise descriptions on which strategic decision-making can then be based. The impulse to arrive at increasingly precise descriptions seems understandable given that a lack of accurate description could lead to flawed strategic decision making. The quest to arrive at such increasingly precise descriptions of the ‘world out there’ has its roots in the Renaissance and the positivist philosophy of science. When this thinking is applied to the strategy world, it entails an assumption that it is actually possible to objectively reduce the complexity of the firm’s environment by using patterns, labels, and regularities. This can be observed in strategy making, where industry and competitor analysis is often proposed as a structured way to evoke the strategy maker’s imagination of the factors determining attractiveness and profitability of industries.

The recognition of the need to describe the world seems very prominent in strategy-making literature. Indeed, descriptive imagination can be found in many frameworks and conceptual aids of the industrial organization view in strategic management. Often this is done by way of approaches such as five forces frameworks, value chains, Du Pont frameworks, product life cycle frameworks, scenario techniques, and market growth share matrices. These frameworks emanating from the industrial organization literature have greatly enhanced our understanding of how to stimulate descriptive imagination through rigorous and systematic diagnostics that facilitate the diagramming and profiling of the competitive environment, with the ultimate aim of creating increasingly precise descriptions. Reviews of these frameworks of descriptive imagination in strategy making shows that several respected authors have emphasized the importance of accurate descriptions of the competitive environment (e.g. Porter, 1980, 1985). This importance was also confirmed in detailed empirical analyses, sometimes even on a global scale (e.g. Porter, 1990), suggesting that the industrial organization literature has a rich tradition of sophisticated frameworks to stimulate descriptive imagination.

From this rich research tradition, a selection of exemplary frameworks to be analyzed in this dissertation had to be made. The selection of the frameworks analyzed was made on the basis of their exposure in the extant literature and their influence on thinking on strategy making. In addition to the frameworks discussed in this section, several other frameworks were identified and reviewed, but were not included for
discussion. The latter fall into two broad categories. The first category includes frameworks of descriptive imagination that were developed on the basis of Porter’s well known industry framework, but redefines industry structure using various bases of segmentation. These, generally not very influential, frameworks include ‘resource-based’ industry typologies (Collis and Ghemawat, 1994, 2001), and frameworks that use information as the basis for such redefinition (e.g. Sampler, 1998, 2001). The second category of frameworks reviewed but not included, focus heavily on existing product life cycles (e.g. Hayes and Wheelwright, 1979), experience curve concepts (e.g. Stern and Stalk, 1998), or the ‘product impact on market share’ (PIMS) database (e.g. Schoeffler, 1977). It would appear that only thinking in terms of existing products and markets could compromise strategy making. Consistent with the definition of strategy making adopted for this dissertation, it is believed that strategy making requires imagination and originality to think beyond existing products and markets.

Predicated on this selection process, three frameworks best encapsulate the paradigm of descriptive imagination and will be included in the discussion further on (section 2.4):

- Ansoff (1980),
- Henderson (1979), and

2.2. Major frameworks associated with creative imagination

The previous section discussed one important thrust in strategy making, namely descriptive imagination. The following section discusses another basic thrust of strategy making: creative imagination.

From the mid 1980s on, the so-called ‘resource-based’ paradigm in strategy making (e.g. Wernerfeld, 1984; Rumelt, 1987; Prahalad and Hamel, 1990) challenged the descriptive orientation in strategy making. Building on Penrose’s conception of the firm as a “collection of productive resources, both human and material” (Penrose, 1959: 31), and contrary to the descriptive focus, proponents of this school have adopted a view on strategy that is essentially creative. Von Krogh and Roos explain that the resource-based approach reestablishes the importance of the individual firm,
Theoretical Framework

as opposed to the industry as the relevant unit of analysis (von Krogh and Roos, 1997).

At the core of this argument is the observation that creative imagination is the source of human invention (Kearney, 1988, cited in Roos and Victor, 1999). Associated with modernity, enlightenment, existentialist philosophy, and the constructive branch in the philosophy of science, creative imagination seeks to generate new opportunities that are implicit but unrealized in descriptive forms of imagination. The modern foundation of this form of imagination in strategy making is particularly present in the enlightenment view of the human being as an autonomous and productive individual. Less prosaic and mundane than descriptive imagination, creative imagination is often cloaked in mystery, and little is known about the stimuli of creative imagination. In the strategy literature, however, this imagination has been described as a means to create and leverage firm resources and can therefore be a source of sustained competitive advantage (Roos and Victor, 1999; Barney, 1991; Wernerfelt, 1984; Prahalad and Hamel, 1990). Indeed, the recognition that the world should not only be described, but also created is very present in the strategy-making literature, and can be found in many frameworks of the resource-based view in strategic management. To illustrate: companies sometimes shape industry conditions, rather than take them for granted (e.g. Hamel, 1996). In a similar vein firms are seen as heterogeneous with regard to their creative capabilities and resource endowments (see, e.g. Wernerfelt, 1984; Barney, 1991).

Frameworks in the resource-based literature have greatly furthered our understanding of how company-specific resources and competencies can be leveraged, combined, and co-opted (see, e.g. Prahalad and Hamel, 1990, also Prahalad and Ramaswamy, 2000) through creative imagination. Creative imagination therefore occupies a central role in many activities such as ‘creating new competitive space’ (Hamel and Prahalad, 1994a); ‘strategy as stretch and leverage’ (Hamel and Prahalad, 1993); and actively shaping, rather than accepting industry conditions (Hamel, 1996). In view of creative imagination’s apparent relevance for strategy making, it is interesting that few actual frameworks of creative imagination in strategy making could be discerned from the literature. This might be due to the relatively recent nature of this field of research when compared to the much more established literature on descriptive imagination in strategy making conducted in the previous section. A review of frameworks of creative imagination in strategy making suggests that while several scholars have
emphasized the importance of creating, rather than accepting industry conditions (e.g. Hamel, 1996), the resource-based perspective associated with creative imagination is generally characterized by a lack of actionable frameworks. Along the same lines, and unlike frameworks from the descriptive imagination literature, resource-based perspectives have enjoyed much less empirical grounding (e.g. Eisenhardt and Martin, 2000; Priem and Butler, 2001a).

The *selection* of exemplary frameworks to be discussed in this dissertation was made on the basis of their exposure, and influence in thinking about strategy making. The three frameworks discussed in this section were widely referenced in the resource-based research realm. In addition to the frameworks discussed, several other frameworks were identified and reviewed, but were not included for discussion. The latter fall into three broad categories. The *first* category of frameworks reviewed but not included sees knowledge resources as the most critical, or ‘core’ resources in the organization, and are specifically geared towards the management of knowledge (e.g. Nonaka and Takeuchi, 1995; Davenport and Prusak, 1997; von Krogh and Roos, 1995, 1996; and Slocum, 1994, Itami, 1987). While the management of knowledge undoubtedly constitutes a critical task, these knowledge management frameworks all focus on the exchange of knowledge within the organization, e.g. through best practice forums, Yellow Page intranet portals, and urgent request functions (e.g. Davenport and Probst, 2000). This suggests that these frameworks are more focused on operational performance improvement, than on strategy making (see Porter, 1996 for a discussion of the difference between operational management and strategy making). These frameworks would fall outside the concept of strategy making as this dissertation sees it (previous chapter, Definitions of key concepts) and were therefore not included in the discussion in this dissertation. The *second* category of frameworks reviewed but not included were frameworks using on total quality and reengineering approaches (e.g. Hammer, 1993 and Champy, 1993), which focus mainly on strategy implementation, rather than strategy making. Since this dissertation assumes that strategy making can be seen as an activity separate from strategy implementation or strategic change (section 3.3. in chapter 1 discusses this assumption in the context of the key concepts in which this dissertation is built), these frameworks were not considered for inclusion. The *third*, and probably largest set of frameworks not included, has paraphrased the articles to be discussed below, without augmenting the conceptual argument (see Priem and Butler, 2001a: 23-25 for a comprehensive overview of these studies).
Predicated on this selection process, three frameworks were identified that could best represent the paradigm of creative imagination, and will be included in the discussion (section 2.4):

- Wernerfelt (1984),
- Prahalad and Hamel (1990), and

2.3. Major frameworks associated with challenging imagination

The previous sections discussed two important thrusts in strategy making, namely descriptive and creative imagination. This section discusses a third thrust of strategy making: challenging imagination.

From the 1990s on scholars started recognizing that neither descriptive nor creative approaches to imagination in strategy making were appropriate to cope with the increasing dynamism in markets. Scholars now argued that earlier, descriptive, approaches were flawed to the extent that they only described what is, and not what could be. Creative approaches were found flawed in that they ascribed pre-eminence to the exploitation of existing resources at the expense of the development of new ones. In short, they were criticized for assuming a static outlook on product market and resource positions, and for omitting the tendency of these positions to erode over time from the framework (e.g. Priem and Butler, 2001a).

The starting point for approaches to challenging imagination was the endeavor to question existing product market and resource positions. The conceptual backdrop for these approaches was complexity theory (Eisenhardt and Sull, 2000). Complexity theory constitutes an approach emanating from biology that sought to explain the co-evolution of organisms and their environments (e.g. Kauffmann, 1993, 1995). Challenging imagination in strategy making further seems associated with the deconstructionist philosophy of science (e.g. Cilliers, 1998). Applications of this broad idea to the business environment appear to be in an emerging state. It is therefore difficult to predict their future acceptance. However, recent contributions by strategy scholars published in highly respected journals (e.g. Eisenhardt and Sull, 2001; Eisenhardt, and Brown, 1999; von Krogh, Roos, and Slocum, 1994), and recent special issues devoted to the topic (e.g. by Organization Science) seem to have
contributed to the acceptance of challenging forms of imagination in strategy making, and suggests its future potential. The recognition of the need to challenge established concepts and ‘ways of doing things around here’ seems particularly relevant to today’s discontinuous business environment. Though less established than the resource-based perspectives (creative imagination), and certainly less established than the literature on industrial organization (descriptive imagination), the strategy content literature nevertheless contributes a small selection of early frameworks that further our understanding of challenging imagination. For example, this type of imagination seems to play a central role in ‘challenging core rigidities’ (Leonard-Barton, 1992, 1995); bringing about ‘industry revolution’ (Hamel, 1996); ‘being coherent, not visionary’ (Lissack and Roos, 2001); ‘managing out of bonds’ (Hamel and Prahalad, 1996), and taking advantage of industries that are ‘blown to bits’ (Evans and Wurster, 1997, 2000). Overall, however, it appears more difficult to discern the most relevant frameworks, in challenging imagination given the emerging nature of the field.

This section attempts to review a careful selection of frameworks that fall in the challenging category. Due to the emerging nature of this research stream, it is difficult to predict the popularity and future authority of the frameworks chosen, and the researcher’s discretion was used in making the selection. Frameworks that were not included were primarily those drawing heavily on analogies from biology (Kauffmann, 1993, 1995), philosophy (Cilliers, 1998), or popular, rather than academic sources (Peters, 1992, 1998).

Predicated on this selection process, three frameworks were identified that would best represent the paradigm of challenging imagination, and will be included in the discussion that now follows:

- Hamel (1996),
- Evans and Wurster (1997), and

2.4. Critical analysis

The nine frameworks selected above are now critically analyzed in terms of their similarities or differences and their strengths or weaknesses. This discussion adheres to a set of specific analytic criteria. These criteria are discussed next.
Theoretical Framework

2.4.1. Analytic criteria

Before the nine frameworks can be discussed meaningfully, it is useful to motivate the choice of analytic criteria that will be used to guide this discussion.

As Huang, Lee, and Wang (1999) have noted, the choice of analytic criteria can be based on intuitive understanding, industrial experience, and literature review. For the present analysis, the same reasoning applies. The choice of evaluation criteria used in this dissertation is based on a review of strategy-making literature (see, e.g. Eisenhardt, and Martin, 2000; Eisenhardt, and Sull, 2001; Jemison, 1981; Teece, Pisano, and Shuen, 1997; Chakravarty, 1997), and the research methodology literature (see, e.g. Denzin and Lincoln, 1994; Miles and Huberman, 1984; Yin, 1994). In addition, interviews with practitioners and academics were used to derive the analytic criteria. Thus, the nine frameworks are evaluated according to scientific criteria (i.e. those assessing validity and reliability), and operational criteria (i.e. those assessing practical relevance and industry-applicability):

- The scientific criteria are based on academic standards and require empirical validation, illustrative examples, clear delineation of units of analysis, as well as an appreciation of the predominant research methods and inference patterns.

- The operational criteria are based on practical relevance and require a deep understanding of the respective application context, the key strategic question asked by the frameworks, the risks or downsides of the framework, and whether or not strategic steps are provided to guide managerial action (see Table 2 below).
Table 2: Overview of the analytic criteria used (source: author)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Evaluation questions</th>
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<tbody>
<tr>
<td>Empirical validation</td>
<td>Has the framework been subjected to empirical testing? Has this empirical validation been done across industries or over time to ensure external validity and reliability?</td>
</tr>
<tr>
<td>Examples</td>
<td>Are specific and illustrative examples given to explain the individual dimensions of a given framework?</td>
</tr>
<tr>
<td>Unit of analysis</td>
<td>What is the unit of analysis? Is the unit of analysis clearly defined?</td>
</tr>
<tr>
<td>Predominant research methods</td>
<td>By what research strategies do scholars arrive at their conclusions? Does a particular research strategy emerge as the most popular?</td>
</tr>
<tr>
<td>Dominant inference patterns</td>
<td>What are the underlying assumptions with respect to causality among the variables under study?</td>
</tr>
<tr>
<td>Application context</td>
<td>Where does the framework work best? What assumptions have to be fulfilled for the framework to perform?</td>
</tr>
<tr>
<td>Strategic question</td>
<td>What is a given framework’s primary objective with respect to performance outcomes and the processes by which these shall be achieved?</td>
</tr>
<tr>
<td>Strategic trap or risk</td>
<td>What is the downside inherent in the application context and inference patterns of the framework?</td>
</tr>
<tr>
<td>Strategic steps</td>
<td>Are steps to guide managerial action provided? Are specific managerial actions provided or implied?</td>
</tr>
</tbody>
</table>

Having outlined the evaluation-approach and evaluation criteria, the actual analysis of the nine frameworks can now be started.

2.4.2. Comparative analysis of the frameworks

For ease of exposition and to facilitate accessibility and readability, the nine frameworks are analyzed in a tabular format (Table 3). The horizontal axis of Table 3 gives the *nine frameworks* of descriptive, creative, and challenging imagination in the
order in which they were reviewed. The vertical axis provides the *analytic criteria* previously identified.
### Table 3: Comparison of the nine frameworks reviewed (source: author).

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<tbody>
<tr>
<td>Empirical validation</td>
<td>Yes, in a wide variety of industries.</td>
<td>Yes, in a wide variety of industries.</td>
<td>Yes, in a wide variety of industries in a global context.</td>
<td>No, conceptual paper.</td>
<td>Yes, but based on secondary case study data.</td>
<td>No, conceptual paper.</td>
<td>Yes, based on secondary case study data.</td>
<td>Yes, based on case study evidence.</td>
<td>Yes, based on secondary case study evidence.</td>
</tr>
<tr>
<td>Examples</td>
<td>Many examples are provided.</td>
<td>Many examples are provided in the original framework and its elaborations.</td>
<td>Largely absent.</td>
<td>Largely absent.</td>
<td>Yes, many examples are provided.</td>
<td>No, largely absent.</td>
<td>Yes, a number of case vignettes is provided.</td>
<td>Yes, many examples are provided.</td>
<td>Yes, many case vignettes provided.</td>
</tr>
<tr>
<td>Unit of analysis</td>
<td>The firm in its competitive environment.</td>
<td>The multidivisional firm and its portfolio of business units.</td>
<td>The industry in which a firm competes.</td>
<td>The firm as such.</td>
<td>Firm resources or competencies as such.</td>
<td>Firm resources as such.</td>
<td>Strategy making as such.</td>
<td>The industry value chain.</td>
<td>Strategy-making procedures as such.</td>
</tr>
</tbody>
</table>
### Theoretical Framework

#### Table 3: Comparison of the nine frameworks reviewed (continued)

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<tbody>
<tr>
<td>Dominant Inference patterns</td>
<td>Strategy making as a function of the strengths/ weaknesses of the firm relative to the opportunities or threats of its environment.</td>
<td>Firms can capitalize on market growth.</td>
<td>Competitive ness is a function of the attractiveness of the industry in which it competes.</td>
<td>Competitiveness is a function of its resource position, rather than its position in the industry.</td>
<td>To the extent a firm is conceived of as a bundle of competencies, its competitiveness can be enhanced.</td>
<td>Resource heterogeneity across firms can lead to sustained competitive advantage.</td>
<td>Upsetting industry equilibrium leads to revenue growth.</td>
<td>To the extent information becomes a commodity, industry value chains are deconstructed.</td>
<td>The more dynamic the markets, the simpler should the rules for competing in them be.</td>
</tr>
<tr>
<td>Application context</td>
<td>Large corporations operating in a national economy.</td>
<td>Multi-divisional firm in a growing market.</td>
<td>Large, incumbent companies in established industries.</td>
<td>No specific application context mentioned. Generic relevance assumed.</td>
<td>Any firm in any industry, particularly in knowledge-driven industries.</td>
<td>Any firm, implicit focus on incumbents.</td>
<td>Mostly information industries.</td>
<td>Mostly fast-moving industries.</td>
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Crafting strategy imaginatively

Table 3: Comparison of the nine frameworks reviewed (continued).

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<tbody>
<tr>
<td><strong>Strategic question</strong></td>
<td>How to best create fit with environment.</td>
<td>How to best allocate resources among competing investment opportunities</td>
<td>How to achieve long-term competitive advantage.</td>
<td>How to configure firm resources across a firm’s product portfolio.</td>
<td>How to identify ‘core’ competencies and leverage these across a firm’s products synergistically.</td>
<td>How to differentiate critical from non-critical resources.</td>
<td>How to create new competitive space.</td>
<td>How to develop new business in a deconstructing value chain.</td>
<td>How to take best take advantage of serendipitously emerging opportunities</td>
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<tr>
<td><strong>Strategic trap or risk</strong></td>
<td>Industry and resource positions perceived as given, and hardly changeable.</td>
<td>Overemphasis on large, multidivisional companies, less relevant in only moderately growing markets.</td>
<td>Industry boundaries are described as static.</td>
<td>Overemphasis on firm resource positions at expense of consideration of industry positions.</td>
<td>Overemphasis on competencies, ‘competitive myopia.’</td>
<td>Overemphasis on resource positions, assumed resource heterogeneity.</td>
<td>Overemphasis on deconstruction, little emphasis on alternative truth.</td>
<td>Overemphasis on information as key driver for competitiveness.</td>
<td>Overemphasis on serendipity, firm’s path dependence largely omitted from framework.</td>
<td></td>
</tr>
<tr>
<td><strong>Strategic steps</strong></td>
<td>Identify S/W relative to O/T.</td>
<td>Segment business portfolio. Balance business portfolio according to cash flow potential.</td>
<td>Assess attractiveness of industry. Deduce generic strategies. Configure activities along value chain.</td>
<td>Identify resources. Configure resources among product portfolio.</td>
<td>Identify core competencies. Focus on core competencies, outsource other activities. Leverage core competencies across product portfolio.</td>
<td>Focus on critical resources. Manipulate these resources to achieve lasting competitive advantage.</td>
<td>Reconception of a firm’s product or service. Avoiding the tyranny of the served market. Challenging industry boundaries.</td>
<td>Ascertaining the extent to which the new economics of information affect a given business. Deduction of strategic imperatives</td>
<td>Establishing extent of market dynamism. Creating room for serendipity. Following a number of simple rules in the pursuit of opportunities.</td>
<td></td>
</tr>
</tbody>
</table>
Having appreciated the general features of the nine frameworks, analysis can now turn to an *in-depth discussion* of the frameworks of descriptive imagination (Ansoff, Henderson, and Porter), creative imagination (Wernerfelt, Prahalad/Hamel, and Barney), and challenging imagination in strategy making (Hamel, Evans/Wurster, and Eisenhardt/Sull). The ensuing discussion first attempts to identify their *similarities and differences*. It then turns to the discussion of the frameworks’ *strengths and weaknesses* in terms of the analytic criteria discussed above.

### 2.4.3. **Critical analysis of frameworks associated with descriptive imagination**

Table 3 suggests that all frameworks of descriptive imagination (Ansoff, 1980; Henderson, 1979; and Porter, 1980) share a focus on the revealing of patterns, or seeing things in a new way as a key *similarity*. Closer analysis reveals that all frameworks reviewed seem to implicitly follow the basic sequence of the three generic steps in strategy making as they were deduced from the strategy process literature earlier in this chapter, namely envisaging, conceiving, and realizing, strategies (see section 1.1.).

However, the activities implied by each of the three generic steps seem to reveal a great deal of diversity. While most frameworks agree that the strategy-making process starts with a description of the competitive environment, there is considerable diversity as to the scope of environmental aspects under investigation, and the relative foci within these aspects. To illustrate: the major *differences* among the frameworks reviewed revolve around the translation of the steps into concrete activities. For example, the BCG matrix focuses on the delineation of measures for market growth as a proxy for cash flow generation potential of the individual business units in the portfolio. Porter, on the other hand, focuses on describing a more comprehensive set of factors that needs to be taken into account when practicing descriptive imagination. In effect Porter’s five forces framework complements the BCG framework in that market growth becomes only one component of a total of five forces defining market attractiveness (Belohlav, 1996). According to Porter: “the growth share matrix can be one component of a competitor analysis when combined with the other kinds of analysis as described [in the five forces]” (Porter, 1980: 364).

With regard to the emphases given to the *individual steps* of the strategy-making process, it appears that the first step, envisaging strategies, was given most attention – apparently at the expense of the other two steps (conceiving and realizing). While
Porter must be credited with forwarding the value chain framework as a tool for conceiving strategies, the BCG and Ansoff frameworks appear to lack such a tool for step two, conceiving imaginative strategies. The lack of attention to concrete processes to realize strategies (step three) seems even more severe. While the generic assumption (particularly in Porter’s framework) is that competitive advantage is sustainable in the long run, little is said about how to actually realize strategies that confer such sustained competitive advantage in the long run. Thus, in terms of similarities and differences, it transpires that most agreement seems to revolve around step one, envisaging strategies. However, steps two and three (conceiving, and realizing strategies) are seen differently by the authors both in terms of relative emphases and also in terms of activities implied. These observations seem to suggest the merits of balancing the diverging emphases that the frameworks give the activities implied by each of the three steps.

In terms of strengths and weaknesses, the analysis suggests two major weaknesses. It first and foremost transpires that a major strength of the frameworks would be that all have enjoyed extensive empirical validation in diverse industrial settings and even in diverse countries. However, it should also be appreciated that the empirical validation was done mainly in the seventies and eighties, a period, which was characterized by relatively stable industry environments and lacked the highly dynamic nature of extant markets. Indeed, the current dynamism in markets characterized by blurring and even vanishing industry boundaries (e.g. Sampler, 1998), would seem to call into question the relevance of strictly descriptive approaches. These tend to take a static definition, or at best, linear view of the evolution of industry boundaries as the cornerstone of strategy formulation. This static definition of industry boundaries therefore seems to represent a key weakness of descriptive imagination. According to Stalk, Evans, and Schulman,

“when the economy was relatively static, strategy could afford to be static. In a world characterized by durable products, stable consumer needs, well defined national and regional markets, and clearly identified competitors, competition was a ‘war of position’ in which companies occupied competitive space like squares on a chessboard.... Competition is now a ‘war of movement’ in which success depends on anticipation of market trends and quick response to changing customer needs. Successful competitors move quickly in and out of product-markets, and sometimes even entire businesses – a process more akin
Theoretical Framework

to an interactive video game than to chess” (Stalk, Evans, and Schulman, 1992: 62).

The quote by the three strategy consultants above strongly suggests that the assumption of static industry boundaries could compromise the potential of the frameworks reviewed when applied to environments where such conditions do not hold. Even if the frameworks and their assumptions would hold (as indeed they do in more mature, highly asset-intensive industries, such as steel manufacturing, see Collis and Ghemawat, 1994), their explicit focus on descriptive imagination at the expense of the two other two basic thrusts in strategy making, creative and challenging imagination, seems sub-optimal. This conjecture can be validated with a quote by Hamel:

“The traditional ‘competitive strategy paradigm’ (e.g. Porter, 1989) with its focus on product-market positioning focuses on only the last few hundred yards of what may be a skill-building marathon. The notion of competitive advantage (Porter, 1985) which provides the means for computing product-based advantages at a given point in time... provides little insight into the processes of knowledge acquisition and skill building” (Hamel, 1991: 83; emphasis added).

Hamel’s call for more emphasis on skill and competence creation suggests that descriptive approaches to strategy making could be less effective in certain environments and clearly necessitates the inclusion of creative and challenging forms of imagination.

A second weakness stems from the differences in the frameworks. While all the frameworks seem to have adopted the three generic steps - envisaging, conceiving, and, realizing strategies - they have done so implicitly only. While the generic steps are implied, the diversity of their implied actions seems to compromise their potential to make a clear link between the question of ‘what’ and the question of ‘how.’ While all frameworks implicitly follow the three generic steps in strategy making, they have lost this link explicitly. However, the stance of this dissertation is that in crafting strategy imaginatively, it is decidedly difficult to focus exclusively on what strategic positions of the firm lead to optimal performance under varying environmental circumstances (content), without simultaneously considering how (process) a firm’s administrative systems and decision processes influence its strategic positions.
Therefore, in order to mitigate the weaknesses while building on the strengths of the frameworks reviewed, the present dissertation proposes to cluster the activities mentioned by the authors in the three generic steps of the strategy-making process in order to make the strategy-making process more lucid and user-friendly.

Overall the analysis identified two key weaknesses of the major frameworks associated with descriptive imagination:

- While the frameworks seem to implicitly adopt the sequence of the three generic steps in the strategy-making process, the diversity of their implied actions seems to compromise their potential to make a clear link between the question of what should be done in strategy making and the question of how it is accomplished.

- While sophisticated in their descriptive power, the frameworks reviewed could suffer from a trap inherent in this same sophistication: the result could be “a never-ending plethora of new descriptions, like different industry analyses, different SWOT analyses, and different portfolio analyses” (Roos and Victor, 1999: 349). In other words, an important downside of descriptive imagination, i.e. the quest to develop increasingly precise descriptions seems to be the proverbial ‘paralysis by analysis,’ which could neglect creative and challenging forms of imagination in strategy making.

2.4.4. Critical analysis of frameworks associated with creative imagination

Table 3 suggests two main similarities. First, the frameworks (Wernerfelt, 1984; Prahalad and Hamel, 1990; Barney, 1991) seem to share the similarity of a focus on creating strategies based on leveraging resources across markets, rather than focusing on positioning within a given market, as did the frameworks of descriptive imagination. Furthermore, it appears that the frameworks in Table 3 that all focus on resources, or bundles of resources as the key interest of strategy making. One major contribution of these frameworks’ focus on resource positions, rather than on product market positions would consequently be to direct scholarly attention back towards resources as important antecedents of product market positions (Priem and Bulter, 2001a; Hamel, 1991). It seems interesting to note that in early conceptualizations of strategy making (Ansoff, 1980), scholars had generally give equivalent attention to firm strengths and weaknesses versus the opportunities and threats emanating from
the competitive environment and industry structure. The publication of Porter’s work (particularly Porter, 1980) has then shifted the emphasis toward external, industry-based competitive issues. The common feature of the frameworks reviewed in Table 3 is that they seem to have served as a reminder that creative imagination “lies at the heart of their competitive positions” (Dierckx and Cool, 1989, cited in Priem and Butler, 2001a: 23).

The second similarity is that all creative-imagination frameworks seem to implicitly follow the basic sequence of the three generic steps in strategy making as they were deduced from the strategy process literature: envisaging, conceiving, and realizing strategies (section 1.1. in the present chapter). To illustrate, all the frameworks, albeit in varying degrees, suggest the differentiation between critical and non-critical resources or core competencies as a first step (envisaging strategies). This concern seems understandable from the practitioners’ perspective, since, if a manager knows which components of the portfolio of organizational resources are critical from a strategic point of view, he can focus his attention on them. Similarly, the second and third step (conceiving and realizing) is typically seen as associated with “bridging the gap between exploiting existing resources and building new ones” (Wernerfelt, 1984: 178).

However, the activities implied by each of the three generic steps seem to reveal a great deal of diversity. This difference seems particularly evident in the first step, envisaging imaginative strategies. To illustrate: different scholars seem to hold different views concerning appropriate criteria to be used to distinguish critical from non-critical resources. While Wernerfelt merely emphasizes the importance of delineating the most important resources without explicitly providing criteria, Barney (1991) proposed the criteria of value creation for the company, rarity compared to competition, as well as imitability, and substitutability. Prahalad and Hamel distinguished what they called core competencies from ‘non-core’ competencies as follows: core competencies should be suitable for application in many different markets, they should create a significant contribution to customer value, and consonant with Barney, competitors should have difficulty in imitating them (Prahalad and Hamel, 1990: 84). Thus, in terms of similarities and differences, it transpires that while all three steps of the strategy-making process can be delineated from the frameworks, the emphasis appears to center around step one. Steps two and three seem to be given much less attention. Moreover, despite the common emphasis
on step one, this step is apparently viewed differently by the authors both in terms of emphasis relative to the other steps and also in terms of activities implied. The observations made seem to suggest the merits of balancing the emphases between the activities implied by each of the three steps.

In terms of strengths and weaknesses it should first and foremost be appreciated that all frameworks reviewed have considerably enhanced our understanding of how to view firms from the resource-, rather than from the product market side. They have served a useful purpose in alerting scholarly attention to the criticality of tending to corporate resource positions as fundamental antecedents to corporate product market positions. However, a major weakness of the frameworks would be that systematic empirical validation of this very focus seems largely outstanding (see, e.g. Eisenhardt and Martin, 2000; Priem and Butler, 2001a for the most recent criticism of the lack of empirical grounding). The root cause of the lack of empirical work in the field is sometimes ascribed to the tautological nature of the definition of core-competencies, and the criteria used to distinguish core from non-core competencies: those resources that can generate sustained competitive advantage are identified by their ability to do so (see, especially, Priem and Butler, 2001a,b; and Barney, 2001). This lack of empirical grounding was recently even described as the key impediment to progress in the resource-based research realm (Priem and Butler, 2001a,b).

A second key weakness of the frameworks reviewed would be their strong analytic emphasis on resource positions at the expense of the competitive environment (i.e. at the expense of descriptive imagination). It seems interesting to note that while these frameworks have been forwarded in recognition of the simplifying assumptions underlying the industrial organization approach to strategy making (e.g. that of omitting resource positions from the framework), they ironically introduce yet another set of simplifying assumptions (e.g. that of omitting the competitive environment from the framework). While Wernerfelt’s influential article starts with the sentence “For the firm, resources and products are two sides of the same coin” (Wernerfelt, 1984: 171), the frameworks reviewed do not seem to accord equivalent attention to product or market and resource positions, respectively. It should be appreciated that the drawbacks associated with the mutual exclusion of industry and resource-positioning perspectives have been largely neglected so far, and are only now being

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6 Tautological definitions are true by definition, and thus not subject to empirical testing (Williamson, 1999).
Theoretical Framework

addressed in the most recent literature (e.g. Priem and Butler, 2001a,b; Barney, 2001). Two prominent scholars succinctly summarized that Wernerfelt’s

“...two sides of the coin’ conceptualization has come to represent, surely in a way unintended by Wernerfelt, the separate consideration of firm resources and the competitive environment. Such mutual exclusion may reflect the state of the academic field, but is not an accurate reflection of the practice of strategic management. This artificial separation... may be restricting out ability to fully conceptualize strategy making” (Priem and Butler, 2001ab: 64).

This inadequacy would clearly necessitate the inclusion of approaches to strategy making that explicitly describe such product market positions, i.e. it would necessitate the inclusion of descriptive forms of imagination in crafting strategy.

A related, third, key weakness of the frameworks reviewed would be their failure to acknowledge the tendency of resource positions to erode over time. Yet, the tendency of resources to become obsolete relative to the competitive environment, could critically affect the competitiveness of the firm (Leonard-Barton, 1992, 1995; Gibbert, Leibold, Voelpel, 2001). It seems almost ironic that although the resource-based approach to strategy making began as a dynamic approach emphasizing the development of resources over time, e.g. by advocating “balance between exploitation of existing resources and the development of new ones” (Wernerfelt, 1984: 178), much of the subsequent literature has been static in concept (Teece, Pisano, and Shuen, 1997; Eisenhardt and Martin, 2000; Priem and Butler, 2001a). This drawback would clearly necessitate the inclusion of approaches to strategy making that challenge established wisdom, path dependent behaviors, and resource positions in firms, i.e. it would necessitate the inclusion of challenging forms of imagination in crafting strategy.

A fourth important weakness stems from the differences between the frameworks. While all frameworks seem to have adopted the three generic steps of envisaging, conceiving, and realizing strategies, they have done so implicitly only. Indeed, while the generic steps are implied, the diversity of their implied actions seems to compromise their potential to make a clear link between the question of ‘what’ (pertaining to strategy content research) and the question of ‘how’ (pertaining to strategy process research). This can be partly attributed to the fact that the analyzed
Crafting strategy imaginatively

frameworks emanate from the strategy content realm, which traditionally focuses mainly on the ‘what’ question. Thus, while all frameworks implicitly follow the three generic steps in strategy making, they have lost this link explicitly. However, the stance of this dissertation is that in crafting strategy imaginatively it is decidedly difficult to focus exclusively on what strategic positions of the firm lead to optimal performance under varying environmental circumstances (content), without simultaneously considering how (process) a firm’s administrative systems and decision processes influence its strategic positions.

Therefore, in an attempt to mitigate the weaknesses while building on the strengths of the frameworks reviewed, the present dissertation proposes to cluster the activities mentioned by the authors in the three generic steps of the strategy-making process in order to make the strategy-making process more lucid and user-friendly.

Overall, analysis identified three key weaknesses of the major frameworks associated with creative imagination:

- While the frameworks seem to implicitly adopt the sequence of the three generic steps in the strategy-making process, the diversity of their implied actions seems to compromise their potential to make a clear link between the question of ‘what’ should be done in crafting strategy imaginatively and the question of ‘how’ this should be accomplished.

- While the frameworks have alerted us to the usefulness of looking at strategy making from the resource side, the frameworks reviewed could suffer from a trap inherent in just this focus on creative imagination. The result could be an inappropriate concentration on resource positions at the expense of a balancing focus that describes the competitive environment. In other words, an important downside of the focus on resource positions is the neglecting of descriptive imagination in strategy making.

- While the frameworks have greatly enhanced our understanding of the processes by which resource positions are associated with competitive advantage, these resource positions seem to have largely been described in a static way. This seems understandable, since a firm’s resource positions tend to be ‘path-dependent,’ i.e. a firm’s investment in a set of resources could
constrain its future behavior. However, to the extent to which the competitive environment changes, resource positions could deteriorate in value and even become obsolete, which demands a continuous challenging of the value of a firm’s resource positions. In other words, an important downside of the frameworks’ static treatment of resources is the neglecting of challenging imagination in strategy making.

2.4.5. Critical analysis of frameworks associated with challenging imagination

Careful analysis of Table 3 evidences several similarities. Most importantly, the frameworks (Hamel, 1996; Evans and Wurster, 1997; Eisenhardt and Sull, 2001) seem characterized by a focus on evoking the negation of things previously held. In this sense, they would all focus on a kind of ‘anti-imagination’ - they attempt to negate, defame, contradict, and even destroy the insights gained from descriptive and creative imagination (e.g. Roos and Victor, 1999). Calling it industry revolution, Hamel admonishes managers to be ‘heretics,’ to disillusion themselves of the progress of their companies, and to challenge the established wisdom of their companies and even the entire industry (e.g. Hamel, 2000). Along the same lines, Evans and Wurster advocate a ‘deconstruction’ of things or concepts previously held, such as industry value chains (Evans and Wurster, 1997, 1999). Eisenhardt and Sull seem to go even a step further than that and propose a ‘cockroach’ approach of serendipitously scurrying from one opportunity to the next (Eisenhardt and Sull, 2001: 108).

Careful analysis shows that the central theme of the frameworks reviewed is their explicit focus on dynamic interpretations of strategy as a process of continuous renewal, rather than on strategy as static positions (whether product or market or resource positions), that characterized the previous interpretations of strategy making: descriptive and creative imagination. However, beyond this fundamental similarity, few basic similarities in the individual steps that this process involves can be delineated from the frameworks. From Table 3 it appears that while all frameworks advocate the making of strategies that represent a radical departure from the established rules in the industry in which the company competes, the question of ‘how’ this should be accomplished still seems indeterminate. This should come as no surprise, given the emergent nature of this stream of research. In this dissertation it is therefore believed that much can be gained from crafting a three-step process for challenging imagination.
Crafting strategy imaginatively

In terms of *strengths and weaknesses*, it must *first* and foremost be acknowledged that frameworks of challenging imagination in strategy making could focus our attention on a more informed and critical treatment of the concepts derived from the descriptive and creative imagination. It should be particularly welcomed that the frameworks, if implicitly, re-establish equivalent attention to product market as well as to resource positions of the firm, in that they argue that attention must be given to how resource positions develop over time relative to the competitive environment (see, especially, Hamel, 1996, 2001; Eisenhardt, and Sull, 2001). Particularly in today’s dynamic markets, where resource positions can be eroded and devalued quickly, the challenging approach to strategy making could be beneficial. It must, however, also be realized that all frameworks reviewed, while sometimes building on extensive numbers of case vignettes, lack rigorous empirical validation. This weakness is understandable given the emerging nature of the topic, but could be a key impediment to the conceptual development of the field (Eisenhardt and Martin, 2000).

As a second weakness of the frameworks reviewed can be seen the inherent risk of challenging imagination: ‘strategic nihilism’ (Roos, personal communication, June 2000). Roos and Victor observed:

“Gary Hamel, [who] clearly uses challenging imaginations in his writings, does not show an alternative truth, he can only reconfirm what truth is not. What is Gary Hamel’s prescription for strategy making? Labeled ‘strategy as revolution,’ he asks us not to plan but to subvert the rules, overthrow the elite, rally the radicals, raise hell, take off our blinkers, and scrap the hierarchy.... Yet, there challenging imagination has nothing new to put on the slate” (Roos and Victor, 1999: 350).

The very focus of challenging imagination on the negation of the sense of progress that can come with descriptive and creative imagination in strategy making could therefore also be its downside. In its quest to defame and negate, challenging imagination in strategy making could fail to provide feasible alternatives to the negation of product or market, or resource positioning. This inadequacy strongly calls for imaginations that ‘describe’ and ‘create,’ rather than only defame. Indeed, the very process of falsifying and defying might require so much time and energy for its own operation that this preoccupation alone could become a motivation in itself that is powerful enough, however curtailed it may be, to turn into a compulsive mode of
behavior. It would appear that the trap inherent in challenging imagination in strategy making makes the complementing of challenging imagination with descriptive and creative imagination highly opportune.

Therefore, in an attempt to mitigate the weaknesses while building on the strengths of the frameworks reviewed, the present dissertation proposes to exploit the evidently complementary nature of the three imaginations in strategy making in one integrated framework, the strategy-making matrix.

To conclude, analysis identified two key weaknesses of the major frameworks associated with challenging imagination:

- While the frameworks seem to implicitly accept the necessity of guiding managerial action, and while a central theme in all the frameworks reviewed is strategy making as a process of continuous renewal, little is said about the individual steps comprising this process. This seems to compromise their potential to make a clear link between the question of ‘what’ and the question of ‘how.’

- While sophisticated in their challenging approach to strategy making, the frameworks analyzed could suffer from a trap inherent in just this sophistication: the result could be an unending circle of negation and rejection. In other words, an important downside of challenging imagination, i.e. of the quest to challenge the sense of progress that can come with descriptive and creative forms of imagination in strategy making, could be “strategic nihilism” (Roos and Victor, 1999: 351), possibly at the expense of descriptive and creative imagination.

2.5. Key shortcomings of existing frameworks

The previous sections have critically discussed the limitations of the individual frameworks that best encapsulate the three paradigms, descriptive, creative, and challenging imagination. This section attempts to summarize the key limitations across all frameworks discussed. An appreciation of these overall limitations of existing frameworks is fundamental to this dissertation, since it manifests the benefits of the new, integrated framework proposed in this dissertation.
Upon analysis, existing frameworks suffer from two key limitations:

- The frameworks reviewed are often strong in one thrust of strategy making only (descriptive, creative, and challenging imagination, respectively); generally without taking cognizance of the other two thrusts of strategy making.

- The frameworks reviewed are often strong in suggesting what can be done (i.e. the content of a firm’s strategy making), but mostly lack concrete recommendations as to how this is to be accomplished (i.e. the process and constitutive process steps of strategy making).

The shortcomings of the frameworks analyzed imply the following:

- The first shortcoming could lead to inadequate conjectures in strategy making and is strongly indicative of the complementary potential of the frameworks analyzed.

- The second shortcoming is strongly indicative of the benefits of a three-step approach to aid strategy making.

In conclusion, the two main shortcomings of existing frameworks necessitate an integrated approach to crafting strategy imaginatively that addresses it as a three-step process (envisaging, conceiving, and realizing) revolving around the complex interplay of all three imaginations in strategy making (descriptive, creative, and challenging imagination).
3. An integrated framework for crafting strategy imaginatively

“A complete model of competitive advantage would require the full integration of models of the competitive environment with the models of firm resources.... The separate consideration and mutual exclusion of firm resources and competitive positions may reflect the state of the academic field, but is not an accurate reflection of the practice of strategic management. This artificial separation may be restricting our ability to fully conceptualize strategy making” (Priem and Butler, 2001a: 64, emphasis added).

To Priem and Butler’s very recent observation of the need to integrate descriptive and creative imagination could be added that a third aspect, challenging imagination, needs to form part of a fully integrated framework, in order to accommodate the tendency of resource - as well as competitive positions - to erode over time. Consequently, it is believed that, when viewed together in their essences, the complementary designs of three imaginations yield a fuller picture of the foundations of strategy making. In other words, the limitations of descriptive, creative, or challenging imagination suggest that seeking a balanced combination of all three could be a sensible approach to crafting strategy imaginatively. In recognition of the limitations of existing frameworks, this section proposes a new, integrated framework: the strategy-making matrix. The strategy-making matrix builds on the strengths of the frameworks analyzed, while attempting to eliminate their weaknesses. It addresses strategy making as a three-step process (envisaging, conceiving, and realizing) that revolves around the complex interplay of the three basic thrusts of strategy making (descriptive, creative, and challenging imagination).

Before the new framework is discussed, two explanatory points of departure are made. The first explanatory point of departure draws on psychology in order to address the question of how the complementary potential of the three basic thrusts of strategy making can best be exploited in an integrated framework. The second explanatory point of departure draws on multivariate logic in order to address this dissertation’s approach for structuring the imagination levers in the nine boxes of the matrix.
3.1. Premises regarding the interplay of the three imaginations

One conclusion from the critical analysis of the frameworks associated with each of the three imaginations was the recognition of their complementary nature. The question arising from this conclusion is how to best structure the integration of the frameworks analyzed so as to take full advantage of their complementary nature. For this purpose a useful conceptual point of departure can be gained from psychology, such as the one provided in the 1930s by the German psychologist Paul Helwig (1936). Helwig, in an endeavor to provide an integrated view on diametrically opposed human orientations or ‘values’ as the author called them (e.g. egocentricity versus altruism), emphasized the following:

“Each value only represents a value in its own right if there is a balanced tension to its positive counterpart. Most importantly, this value can only be augmented if the tension that connects it to its counterpart is also augmented, i.e. when its counterpart is also augmented. To illustrate, in order for ‘generosity’ to be augmented, there needs to be ‘discipline.’ If ‘generosity’ is not balanced with ‘discipline,’ it might deteriorate into ‘extravagance.’ No value can realize its full potential without its counterpart. Indeed, only through the consideration of, and balancing with, its counterpart does the value gain its existence.” (Helwig, 1936: 66, own translation, emphasis in original).

Helwig’s observations are clearly reminiscent of older insights emphasizing duality, particularly the Zen Buddhism and Taoism. Helwig’s methodology is also akin to structuralism in anthropology, which presumes that all cultures have a deeper structure that revolves around patterns of opposition, such as good/bad, rational/mythical, and male/female. Structuralism in anthropology typically endeavors to expose a system’s culture by reference to its base configurations of polar opposites.

A third, and more mundane, conceptualization would be a jazz combo. In jazz, diverse components need to be brought together: musicians, instruments, solos, themes, tempos, and an audience. Their roles, however, are not fixed, instead their alternation is perhaps the key feature of jazz. At any given time each musician can come to the foreground and become a soloist, then retreat and perform his or her role as a part of the combo (see, e.g. Kester, Piore, and Malek, 1998: 89). What makes Helwig’s conceptualization particularly suitable for the purpose of this dissertation is his juxtaposition of the individual values in a balanced, integrated framework (see Helwig, 1936: 65-69). This framework emphasizes that each value can only be useful
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in its own right if it stands in a positive tension to its counterpart. The framework, while emanating from psychology, seems particularly well versed for adaptation to the strategy-making research realm.

Helwig’s (1936) Spannungsfeld conceptualization provides an integrated view of the three imaginations as this dissertation has conceived them. As emphasized in chapter 1 (delineation of key concepts and research objective), the orientation proposed in this dissertation is one of integration and consolidation. The literature review suggested that strategy theorists are often too preoccupied with defending or attacking specific paradigms and the concomitant frameworks, and could lose sight of the complementary nature of the discussed frameworks in strategy making. The three imaginations can be seen as forming a Spannungsfeld, in line with Helwig’s ‘values.’ The complementary nature of the three imaginations can therefore be usefully conceptualized using Helwig’s (1936) Spannungsfeld approach as the conceptual point of departure, as illustrated in Figure 3.

Figure 3: A triad Spannungsfeld framework of the three imaginations (source: author).
As was discussed in the definition of key concepts (section 3.2. in chapter 1), a defining characteristic of comprehensive ‘frameworks,’ as opposed to limited ‘models,’ is the latters’ explanatory, rather than normative, nature. Thus, based on definition of this dissertation’s key concepts, the main conjecture of the theoretical framework is that what is appropriate in strategy making depends on the situation and cannot be determined in a dogmatic or peremptory fashion. In other words, with the successive arising of new situations, reexamination of strategies is necessary to ensure the maintenance of effective alignment of strategy-making efforts with actualities. The conceptualization of the three imaginations as a Spannungsfeld is therefore a fundamental premise underlying the strategy-making matrix. The premise seeks to establish crafting strategy imaginatively as the complex interplay among the three imaginations, rather than prescribing a single one.

It should also be appreciated that the non-normative nature of the framework suggests important implications for the evaluation of strategic alternatives. Obviously, crafting strategy, or the attempt to identify the actual or optimal strategy for a firm, raises the question of how the actual or proposed strategy is to be evaluated against possible alternatives (Learned, Christensen, Andrews, and Guth, 1969: 22). Evaluation of strategic alternatives constitutes a field of research in its own right (e.g. Day, 1994), and can present a formidable challenge to the practicing strategy maker. As Singh put it: “Strategic management is about managing difficult trade-offs well” (Singh, personal communication, June 2000). The Spannungsfeld notion, due to its explanatory and non-normative nature, is in line with the most widely-respected views on the evaluation of strategic alternatives (e.g. Learned, Christensen, Andrews, and Guth, 1969: 22-28; Hofer and Schendel, 1979: 189-217), in that it attempts to outline critical parameters to aid in making discriminations, instead of prescribing the ‘one best’ strategy.

Overall, the Spannungsfeld notion adopted in this dissertation as a premise for the proposed framework seeks to establish evaluation of strategic alternatives as striking a balance between the three imaginations. This exercise comprises the three generic steps of the strategy-making process, and within each step, the framework proposes three imagination levers (see blueprint for the strategy-making matrix earlier in this chapter, Figure 1). Premises regarding these imagination levers are discussed next.
3.2. Premises regarding the structure of the imagination levers

One conclusion from the critical analysis of the frameworks associated with each of the three imaginations was the recognition of great inconsistency among, and even neglect of, concrete steps for strategy makers. The question arising from this conclusion is how the three imagination levers can best be structured within the individual boxes of the strategy-making matrix (see blueprint for the strategy-making matrix, Figure 1). The imagination levers need to be exhaustive, but also limited in number so as to be simple and user-friendly. At the same time, they would need to be clearly delineated, i.e. mutually exclusive, in order to avoid unnecessary overlaps.

A useful conceptual point of departure for appropriately structuring the imagination levers in the nine boxes of the strategy-making matrix can be gained from multivariate logic. In multivariate logic, the concept of sample space is used for purposes of structuring visual representations. A sample space represents a collection of events, and is usually depicted in Venn diagrams. Each event is assigned an area in the diagram corresponding to its proportion of the overall sample space. These events can vary in the degree to which they are mutually exclusive, and collectively exhaustive, as described in Figure 4.

Figure 4: The criterion of mutually exclusive and collectively exhaustive (source: author)

In the Venn diagram on the left, events in a sample space are mutually exclusive if none of the events intersect one another. The middle diagram shows that events are collectively exhaustive if every event is contained in at least one event set. Finally, the right Venn diagram illustrates that a sample space consists of events that are both mutually exclusive and collectively exhaustive. For the purpose of this dissertation, the case of mutually exclusive and collectively exhaustive events would seem to be the most promising way of structuring the three imagination levers in each of the nine
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boxes of the strategy-making matrix. In other words, in order to avoid unnecessary duplication, as well as to avoid missing out important aspects of strategy making, this dissertation seeks to structure the imagination levers in a way that is *both mutually exclusive and collectively exhaustive*.

How can the three imagination levers be structured to fulfill this criterion? A mutually exclusive and collectively exhaustive approach to structuring the three imagination levers can be deduced from what is widely accepted as the classic definition of the essence of strategy (see Chandler, 1962; Ansoff, 1965; Learned, Christensen, Andrews, and Guth, 1965) - *Sun Tzu*’s famous axiom in his book on military strategy entitled ‘The Art of War:’

> “Know your *enemy*, know *yourself*, know where you *are*, and you will win a thousand battles” (Sun Tzu and Cleary, 1997: 20, emphasis added).

Sun Tzu’s classic definition of strategy was widely adopted, elaborated and re-interpreted for business, rather than martial purposes (e.g. Rumelt, Schendel, and Teece, 1994; Brandenburger and Nalebuff, 1996). It was argued that business strategy revolves around the *firm* (Sun Tzu’s ‘yourself’), its *environment* (‘where you are’), and its partners/competitors (‘your enemy’). This definition is also reflected in the major frameworks associated with descriptive, creative, and challenging imagination that were critically analyzed for this dissertation. Table 4 below demonstrates how the analyzed frameworks reflect Sun Tzu’s definition of strategy and its constituent areas of intervention (the firm, the firm’s environment, and its partners/competitors).
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#### Table 4: Areas of intervention in the frameworks reviewed (source: author).

<table>
<thead>
<tr>
<th>Framework</th>
<th>Areas of intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ansoff (1980)</td>
<td>Firm itself (strengths/weaknesses) and environmental context (opportunities/threats), particularly competitive context</td>
</tr>
<tr>
<td>Henderson (1979)</td>
<td>Firm itself (esp. diversified firm) market environment (particularly growing market)</td>
</tr>
<tr>
<td>Porter (1980)</td>
<td>Competitive environment (including partners, suppliers, and competitors)</td>
</tr>
<tr>
<td>Wernerfelt (1984)</td>
<td>Firm and its (internal) resources as deployed in product market environment</td>
</tr>
<tr>
<td>Prahalad/Hamel (1990)</td>
<td>Firm and its (internal and external) resources; resource cooption from partners</td>
</tr>
<tr>
<td>Barney (1993)</td>
<td>Firm and its internal resources</td>
</tr>
<tr>
<td>Hamel (1996)</td>
<td>Firm in its re-conceived environment, particularly in relation to its partners (competitors can become collaborators)</td>
</tr>
<tr>
<td>Evans and Wurster (1997)</td>
<td>Firm environment, firm itself, new partnerships due to deconstructed value chains</td>
</tr>
<tr>
<td>Eisenhardt and Martin (2000)</td>
<td>Firm capabilities in dynamic firm environment, capability exchange (best practices) with suitable partners</td>
</tr>
</tbody>
</table>

The above observations lead us to conclude that in both martial and productive endeavors, areas of intervention in strategy that fulfill the criterion of **mutually exclusiveness and collective exhaustiveness** might be summarized as:

- The firm’s *environment*,
- the firm *itself*, and
- the firm’s partners/competitors and other stakeholders.

Overall, this dissertation proposes that the imagination levers for crafting strategy imaginatively focus on the firm, its environment, and its partners (broadly conceived as competitors, suppliers, see Brandenburger and Nalebuff, 1996). Thus, the nine boxes of the strategy-making matrix yield a total of 27 imagination levers that focus on the firm, its environment, and the firm’s partners/competitors. The following sections systematically elaborate the blueprint for the strategy matrix by way of discussing the strategic imagination levers associated with each of the three
imaginations, in order to arrive at an integrated approach to crafting strategy imaginatively.

4. A three-step approach for descriptive imagination

The framework below (Figure 5) is an elaboration of the ‘blueprint for the strategy-making matrix’ (as provided at the beginning of the present chapter) in that it clusters the activities implied by descriptive imagination, using the three generic steps in the strategy-making process, namely envisaging, conceiving, and realizing imaginative strategies. The resulting nine strategic imagination levers in Figure 5 below are derived from the critical analysis of existing strategy content and process frameworks conducted previously.

Figure 5: Descriptive imagination as one of the basic thrusts in strategy making (source: author).
Clustering the nine imagination levers under the three generic steps of the strategy-making process attempts to eliminate the two key weaknesses that characterize earlier work in strategy. First, the critical analysis conducted previously in this chapter has shown that previous research in strategy content has mostly focused on ‘what’ the strategic positions of the firm leading to optimal performance under varying environmental circumstances, without simultaneously considering the three generic steps of the strategy-making process, i.e. the question ‘how’ such positions can be reached in the first place. Second, the strategy-making matrix suggests that descriptive imagination, while critical, is not a panacea. It represents only one of three basic thrusts in strategy making. The strategy-making matrix therefore complements descriptive imagination with two further thrusts, namely creative imagination, and challenging imagination.

Thus, for expository purposes,

- The present section elaborates on the nine individual levers for stimulating descriptive imagination shown in Figure 5. In line with Sun Tzu’s axiom, discussed in the previous section, the three imagination levers in each step focus on the firm itself, the firm’s environment and the firm’s partners/competitors in order to provide a mutually exclusive and collectively exhaustive outlook on strategy making.

- The two sections that follow focus on creative and challenging imagination respectively, so as to achieve an integrated outlook on strategic imagination in line with the proposed Spannungsfeld approach discussed above.

4.1. Step one: Envisaging imaginative strategies

Envisaging imaginative strategies comprises three imagination levers. The first one starts with the clear definition of the industry in which the firm is competing (i.e. the environment of the firm in Sun Tzu’s framework). Within these defined boundaries, industry dynamics are diagnosed in a second step (corresponding to the competitors’ actions in Sun Tzu’s framework). Eventually the implications of these observations for adequately allocating resources among competing investment opportunities are ascertained, and the investment portfolio of the firm is balanced accordingly (corresponding to the ‘firm itself’ in Sun Tzu’s framework). Overall, this structure
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attempts to provide a mutually exclusive and collectively exhaustive outlook on envisaging strategies.

4.1.1. Defining industry boundaries

Industry analysis represents a focal concern in descriptive imagination, which seeks to describe and simplify a complex and confusing world ‘out there.’ As Porter emphasized, the industry or industries in which the firm competes is the single most important variable in strategy making (Porter, 1980, 1985, 2001). Industry analysis illuminates the competitive landscape in ways so as to aid strategy making. To illustrate: it can help establish whether a particular industry is likely to prove attractive to the average competitor and consequently shed light on profit differences among competitors in that industry (Collis and Ghemawat, 1994). In descriptive imagination the industry or industries in which the firm competes, determine or significantly affect industry performance (e.g. Porter, 1980; Bain, 1956). Put differently, the industry or industries in which the firm competes pose contingencies in terms of the types and ranges of competitive actions pursued in different contexts (e.g. Datta and Rajagopalan, 1998). Before beginning to analyze an industry, it seems expedient to define the boundaries of the industry to be analyzed. For the purpose of this dissertation, industry analysis is divided into two levers: ‘Defining industry boundaries,’ which will be discussed in this sub-section, and ‘diagnosing industry dynamics’ which will be discussed in the next sub-section. Thus industry definition becomes the fundamental starting point in descriptive imagination.

Literature shows that industry definition is not a straightforward task, because industry boundaries can be defined along a variety of dimensions. For example, should the definition of the U.S. automobile industry be confined to passenger cars, or should it also include light trucks, which have become an increasingly popular means of transportation? (Collis, and Ghemawat, 1994). Statistical definitions such as the Standard Industrial Classification (SIC) are often used to answer these and similar questions (Bettis, 1998). However, using the SIC approach can unduly limit descriptive imagination. If the SIC approach is used, the automobile industry would be defined as consisting of a fairly homogenous set of companies. Additional complexities can arise if the ‘automobile industry’ is more broadly conceived as the ‘transport industry.’ The consequent narrow conception of the automobile industry hardly captures the nature of competition occurring within it, and would preclude, e.g. competition from the public transport sector. This is one reason why SIC codes were
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criticized for rarely corresponding to competitively relevant industry conditions (e.g. by Collis and Ghemawat, 1994).

A review of the literature demonstrates that to amend these challenges in defining industry boundaries, substitution possibilities on both supply and demand need to be identified and accounted for. On the demand side, the strategy maker should look for alternative products offered by direct competitors, as well as those competitors who currently offer products or services that might be close substitutes of their own. On the supply side, technological substitutability should be accounted for as well. In the case of the automobile industry, the advent of alternatives to traditional combustion engines would be noteworthy. Therefore, demand-, and supply-side considerations usually form part of industry definitional endeavors (Abell, 1980; Collis and Ghemawat, 1994; Robinson and McDougall, 1998).

Despite the principle of substitutability, the definition of industry boundaries often remains as much ‘an art as a science’ (Collis and Ghemawat, 1994: 175). This is mainly due to ambiguities surrounding the various dimensions of the scope of the industry to be defined, and particularly the questions of vertical and geographic scope (Robinson and McDougall, 1998). Researchers provide answers to the ambiguities surrounding vertical and geographical scope. With regard to vertical scope, the key issue is how many vertically interlinked stages of the value chain should be identified to span it. In general, if a competitive market for third party sales exists between vertical stages, the stages could be uncoupled in defining industries. If not, they should not be linked at all (Collis and Ghemawat, 1994; Abell, 1980; Robinson and McDougall, 1998).

With regard to geographic scope, the key issue is whether physically separate markets should be treated as being served by the same industry or distinct industries. A case in point is the pharmaceutical industry, which is generally seen as a ‘global’ industry. This is typically ascribed to the need for amortization of tremendous research and development costs, making the pharmaceutical industry one characterized by high interdependence across national markets (Porter, 1990; Abell, 1980; Robinson and McDougall, 1998). A key criterion for deciding the geographic scope is, therefore, whether competitive positions in international markets are interdependent: the greater the interdependency, the broader the geographic scope (e.g. Porter, 1994).
4.1.2. Diagnosing industry dynamics

Once the industry in which the firm competes has been defined, it is then expedient to
diagnose the dynamics within the industry thus defined. Researchers agree that
diagnosis of industry dynamics represents the most common form of strategy making
in the descriptive mode (Porter, 1980, Henderson, 1979). This is not surprising, given
that careful diagnosis of industry dynamics can help illuminate the competitive
landscape in a way that aids crafting strategy imaginatively. In particular it can help
establish the dynamics in a given industry that affect the profitability of the firms
competing in this industry. One objective of industry analysis is therefore to predict
the average level of long-term profitability of a particular industry (e.g. Porter, 1980).
Another important objective of diagnosing industry dynamics is to gain an
understanding of profit differences among competitors in the same industry. Collis
and Ghemawat explain that the extent of such differences is a helpful indicator of the
scope and type of the strategies that might outperform industry profitability averages
(Collis and Ghemawat, 1994: 175).

Perhaps the best-know framework for diagnosing industry dynamics is the one by
Porter (1980). Porter employed industrial organization economics concerning market
power and profitability to build a cross-sectional framework for explaining individual
firm performance. This author argued that the true origin of competitive advantage
may be the proximate or local environment in which the firm is based. The proximate
environment will define many of the factor markets on which the firm has to draw, the
information that guides strategic choices, and the incentives and pressures on firms to
both innovate and accumulate skills and resources over time (Porter, 1991: 100). Until
Porter, firms in strategic management had been seen as adapting to general, even
rather vague environments (e.g. Rumelt, Schendel, and Teece, 1994). Porter’s five
forces framework substituted a structured, competitive economic environment in
which the ability to bargain effectively in the face of an ‘extended rivalry’ of
competing firms, customers, and suppliers determined profit performance (Porter,
1980).

It should be appreciated that by diagnosing industry dynamics, companies attempt to
achieve superior profitability relative to their competitors and despite the prevailing
industry dynamics. To illustrate: traditionally the focus of industrial organization
economics had been to identify socially wasteful sources of ‘monopoly’ profits. The
diagnosing of industry dynamics, however, has a different focus. Its principal focus
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becomes not one of how to select antitrust and regulatory policies so as to increase consumer welfare, but, rather, how to increase profits (and, if necessary, reduce consumer welfare) by containing and restricting competition (Pennings, 1985; Rumelt, Schendel, and Teece, 1994; Teece, Pisano, and Shuen, 1997).

Several authors agree that the key challenge in diagnosing industry dynamics is to isolate the characteristics of an industry in order to understand the contingencies in terms of the types and range of competitive actions pursuable in that industry (Rumelt, Schendel, and Teece, 1994: 23). The most important characteristics include degree of capital intensity, product differentiability, and growth rate or life cycle. With regard to the degree of capital intensity, the literature generally agrees that the greater the degree of capital intensity, the greater the emphasis on efficient asset management and cost control. A firm in a capital-intensive industry is generally committed to a course of action, since capital intensity often creates rigidity in production processes to such an extent that new products and markets cannot be accommodated without incurring high costs. Capital intensity therefore logically restricts the range of new competitive actions to be pursued relative to those practiced in the past. Thus deviations from past practices are far fewer in capital-intensive industries (Ghemawat, 1991; Datta, and Rajagopalan, 1998).

With regard to the second key dimension along which industry dynamics can be diagnosed, namely product differentiability, it appears that industries, which are highly differentiated, tend to offer more avenues for competition than industries that are less differentiated. Typically an undifferentiated product requires firms to attend primarily to cost and efficiency factors, restricting the type and range of competitive actions. In contrast, in industries that are characterized by high differentiation, the means-ends linkages are relatively more complex, thereby offering a wider range of potential options to individual firms (Porter, 1980, 2001; Ghemawat, 1991; Datta and Rajagopalan, 1998).

*Industry growth rate*, or industry life cycle, is a third key dimension used to diagnose industry dynamics. Industry growth rate influences the availability of opportunities for market expansion, new product introduction and overall levels of competitive variation. High growth industries are characterized by un-programmed decision-making and poorly understood means-end linkages, again resulting in a wider variety of competitive behaviors. As an eminent stream of research in the industrial
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organization research realm, a large number of researchers has investigated the individual stages of growth, also called industry life cycle (see e.g. Fahey and Christensen, 1986 for a comprehensive review).

Typically the \textit{life cycle of an industry} was divided into stages of emergence, growth, shake out, maturity, and decline (e.g. Fahey and Christensen, 1986). Maturity has to date received the most attention. The research indicates that firms pursue different strategies across different industry stages and that particular strategic behaviors are most appropriate at specific stages. The findings suggest that firms adapt their strategies as the industry evolves through its life cycle. In the \textit{maturity phase}, firms tend to capitalize on their high levels of relative product breadth, relative product quality, relative quality of services offered, and vertical integration backward, for superior market share (Willard and Cooper, 1985, cited in Fahey and Christensen, 1986: 176). Furthermore, in the maturity phase there seems to be a clear relationship between efficiency and profitability. The investments required to generate growth are no longer necessary, and efficiency in the form of asset utilization, translates directly into comparative profitability. Research has shown that once the maturity phase develops into the \textit{declining phase}, the most successful firms were those in industries with comparatively low exit barriers, particularly in terms of manufacturing and technology assets (Hambrick, MacMillan, and Day, 1982).

A further question in diagnosing industry dynamics is the \textit{global scope} of analysis. Porter’s findings suggest that among the most significant influences on industry dynamism is the presence of local rivalry. A case in point is Honda, a company that faced competition from eight other Japanese auto companies, all of which compete internationally. It was further found that firms rarely succeed abroad unless they competed successfully with capable rivals at home (Porter, 1990). It must therefore be emphasized that the scope of industry analysis needs to be broadened according to the extent that the industry or industries in which the business competes are of global scope (Porter, 1990, 1994).

Particularly noteworthy in this regard are what Porter (1990) terms ‘related and supporting industries.’ Such ‘\textit{industry clusters}’ are groupings of industries linked together through customer, supplier, or other relationships on global levels. As clusters form, the industries that comprise them tend to become mutually reinforcing. By implication, aggressive rivalry in one industry can spread vertically and
horizontally in the cluster through spin-offs or related diversification (Porter, 1990, 1994). This conjecture seems particularly relevant given the most recent developments in the e-businesses and ‘dot.com’ sectors, where ‘firms are global by birth’ (Hamel, 2000, and Sampler, 1998; Porter, 2001).

4.1.3. Balancing the investment portfolio
Leading authors in the strategy field emphasize that ascertaining industry dynamics can provide important insights into possible avenues of allocating resources among competing investment opportunities, an exercise which the literature often calls ‘balancing the investment portfolio’ (e.g. Ansoff, 1965; Porter, 1980, 1985). Balancing the investment portfolio so as to take optimum advantage of the diagnosed industry dynamics, is a well-established tenet in descriptive imagination in strategy making, as the two following quotes by renowned strategy scholars demonstrate:

“Strategy is the determination of the basic long-term goals of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals” (Chandler, 1962: 13).

“Strategic decisions resemble capital investment decisions, which deal with resource allocation” (Ansoff, 1965: 23).

According to Rumelt, Schendel, and Teece, the key tenet of balancing the investment portfolio as a fundamental lever in envisaging strategies, is derived from the agency theory literature, and is primarily concerned with the design of financial claims and the overall governance structure of the firm. According to these authors, “it is the branch which is most significant to strategic management” (Rumelt, Schendel, and Teece, 1994: 28-29). The rationale behind the endeavor to balance the investment portfolio, is to eradicate the problem observed by Jensen (1988), namely that in many firms, managers have inappropriately directed free cash flow toward wasteful investments in the firms’ portfolios. Indeed, the Boston Consulting Group had offered precisely this diagnosis in their study of many diversified firms in the early 1970s. According to the Boston Consulting Group, many firms mismanaged their portfolios, misusing the funds generated by mature, cash-rich businesses, typically by continuing to reinvest in those businesses long after market-growth had slowed down (Rumelt, Schendel, and Teece, 1994: 29).
The literature on descriptive imagination offers several decision heuristics that serve as decision-making tools for balancing investment portfolios. In the typical case, two or more attributes are used to graph the products on to a grid, and to plot different investment opportunities and their development trajectories over time. Literature suggests that the two best-known specimens are those of the Strategic Planning Institute, and the Boston Consulting Group. Both tools presuppose that a firm can be subdivided into subunits, or ‘strategic business units,’ which are defined in terms of external attributes such as classes of customers served, and organizations with which they compete, and which are sufficiently separate from other strategic business units for them to be treated as profit centers. The delineated strategic business units are then plotted in a matrix that serves as a heuristic for their classification into investment priorities (e.g. Pennings, 1985; Belohlav, 1996).

The central feature of these decision-making heuristics is that they seek to identify likely candidates for preferential treatment in resource allocation decisions. To illustrate: excess profit from so-called ‘cash-cows’ which enjoy high market share in low-growth markets, would not be re-invested, but would be transferred to ‘stars’ deserving preferential treatment due to their favorable positions in high-growth markets. Decisions regarding divestitures can be taken in a similar manner. An example of divestiture would be strategic business units suffering from low market share in a low-growth market (these strategic business units are commonly called ‘poor dogs’). Other examples are well documented in the literature (e.g. in Pennings, 1985).

Seen from this perspective, many downsizing, de-layering, lean management, and business process reengineering endeavors can be interpreted as approaches to dovetail the potential of the individual strategic business units with market contingencies (e.g. Garvin, 1998; Hammer and Champy, 1993; Davenport, 1993). The decision-making heuristics therefore seek to balance the investment portfolio by determining the interdivisional cash flows that underlie the strategic shifts in the company’s product portfolio (Pennings, 19985: 23).

4.2. Step two: Conceiving imaginative strategies

The previous section discussed the three imagination levers associated with envisaging strategies, i.e. with issues appertaining to strategic landscaping, and what the company ‘might do.’ This section discusses the second step, in which the
envisaged strategy is actually conceived, i.e. where concrete steps are taken to ascertain what the company ‘can do.’ Conceiving strategies starts with the configuration of value chain activities so as to create the internal capacity to take advantage of the opportunities in the marketplace. The next two imagination levers seek to establish, and defend, a position in the market against existing competitors. Again the structure of the three imagination levers associated with conceiving imaginative strategies is in line with Sun Tzu’s ‘mutually exclusive and collectively exhaustive’ approach.

4.2.1. Configuring value chain activities

Configuring activities along the value chain is an important technique to stimulate descriptive imagination in the phase where envisaged strategies are actually conceived. The value chain represents a rigorous and systematic diagnostic for describing the underpinnings of a firm’s relative position. The value chain framework postulates that favorable positions in an industry can be described by disaggregating the value creation process of a firm into discrete activities that contribute to the firm’s relative cost position and create a basis for competitive advantage (Porter, 1985). In this sense, the rationale for using the value chain framework revolves around its three uses: first as a template for describing cost position, second as a template for describing produce effects on the cost position of buyers, and third, as a tool for describing the added cost that differentiation might imply (Porter, 1994: 110).

Most authors in the literature agree that the activity disaggregation in a value chain must be complete in the sense that it captures all activities performed by the firm. To aid descriptive imagination in strategy making, it is important that the activity-disaggregation exercise not be too detailed, while still enabling the strategy maker to identify those activities that are strategically important. The heuristic developed by Porter for disaggregating activities, suggests that the resulting activities have different economics, a high potential impact on differentiation, and represent a significant proportion of cost (Porter, 1985: 39-40, 1994: 110). The value chain provides impetus to descriptive imagination by introducing a two-level generic taxonomy of value creation activities that includes primary activities and support activities. Primary activities are directly involved in creating and bringing value to the customer, whereas support activities enable and improve the performance of the primary activities. Support activities thus only affect the value delivered to customers by affecting the performance of primary activities. Primary value chain activities deal with physical
products, whereas support activities deal with issues of procurement, technology development, and human resource management (Porter, 1985: 38).

The concept of the value chain provides further impetus to descriptive imagination in that it aids in understanding important issues pertaining to global industries, thereby widening the focus of the value chain to include the global or transnational firm (Porter, 1990). Both domestic and global firms and industries have value chains, but the global firm would have special latitude along two dimensions: first, configuration, or where the activities in a firm’s value chain are located, and second, coordination, or the nature and extent to which the conduct of dispersed activities is coordinated versus allowing activities the autonomy to tailor their approach to local circumstances. With regard to the first dimension, the international configuration of a firm’s value chain should be done according to two criteria: choosing where to locate each activity, and deciding how many locations should be performing one activity. The rationale in adopting these two criteria is to gain competitive advantage by arbitrating comparative advantage across locations. To illustrate: many multinational software firms have located software development and program maintenance in India so as to take advantage of low-cost programmers (Porter, 1994: 112).

Several researchers agree that the second dimension to be considered when configuring value chains globally is coordination of the globally dispersed value chain (e.g. Porter, 1985; Ghemawat, 1994). The way in which a firm coordinates its activities around the world determines its ability to benefit from a particular configuration (Porter, 1990). Coordination encompasses the setting of standards, the exchange of information, and the allocation of responsibility among sites. Similarly, coordination that involves allocating responsibilities across countries, such as worldwide responsibility for producing particular frameworks, can unleash economies of scale. Coordination involving information and knowledge exchange is needed to foster worldwide learning (Nonaka and Takeuchi, 1995; Hedlund, 1994). Indeed, a central challenge in coordinating value chain activities is how and where information, technology, and knowledge from disparate locations are integrated and reflected in organizational processes (Davenport and Prusak, 1998, Porter, 1990). Coordination of value chain activities across geographically dispersed locations involves daunting challenges, among them language, cultural differences (Hilb, 2000), and difficulties in aligning individual managers’ subsidiaries incentives with the enterprise as a whole (Gibbert, Kugler, Voelpel, 2000). In other words, coordination allows a firm to realize
the advantages of configuring value chain activities globally, while failure to coordinate lessens those advantages (Porter, 1990).

More recent work challenged the descriptive logic of the value chain framework, dismissing its two-level categorization and categorization approach as out-dated (e.g. Eisenhardt and Sull, 2001; Shapiro and Varian, 1999). The main thread of argument in these contributions revolves around the impact of the Internet on the value chain. Most authors agree that since every activity involves the creation, processing, and communication of information, information technology exerts a tremendous influence on value chain activities (e.g. Evans and Wurster, 1997). It would appear that the special advantage of the Internet is the ability to interlink one activity with another, and to make real-time data created in one activity, widely available both within the company and to outside suppliers, channels and customers. Multiple activities can be linked together through tools such as customer relationship management, supply chain management and enterprise resource planning systems. However, as Porter in a most recent article argued, the basic logic of the value chain is not distorted by enabling technologies such as the Internet (Porter, 2001: 74).

4.2.2. Establishing position

Once the industry or industries in which the company competes have been delineated, and the dynamics within the industry’s boundaries have been ascertained, the firm needs to establish a position within the competitive context. The rationale for establishing a position distinct from its existing competitors is one of establishing and sustaining monopoly rents by momentarily inhibiting competition (Teece, Pisano, and Shuen, 1994). The basic argument is that a firm with a position distinct from its competitors benefits, since it faces less competition (e.g. Porter, 1980). A firm that conforms to the strategies and positions of others has many similar competitors that limit the performance of the firm (Henderson, 1979).

Establishing a position typically involves identifying a niche in the market and then exploiting this niche. This means that a firm establishes a position in what it ex ante perceives to be an unexploited or under-exploited niche. Porter (1991: 102) postulated “the firm must stake out a distinct position from its rivals. Imitation almost ensures a lack of competitive advantage and hence mediocre performance.” A distinct position enables a firm to earn higher rents, because the firm would face less competition and perhaps even enjoy a local monopoly (Porter, 1980, 1991).
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The first challenge in establishing a position is to ascertain competitors’ positions. A central tenet in the descriptive imagination literature is that the positioning of a firm in a particular industry be made relative to other players in that industry. This implies that the strategic imperative is not one of establishing absolute dominance, but of establishing a position that is better relative to the immediate competition (e.g. Porter, 1985). In the words of Porter (1994):

“Performance is a function of the attractiveness of the industry in which the firm competes and its relative position in that industry. The firm’s relative position depends on its competitive advantages (or disadvantages) vis-à-vis its rivals. Competitive advantage is manifested either in lower costs than rivals’ or in the ability to differentiate and command premium prices that exceed the extra cost ofdifferentiating” Porter (1994: 109).

In descriptive imagination, therefore, the key task for the firm is one of becoming better than its immediate competitors. This demands adequate consideration of the competitors’ relative positions, and the underpinnings thereof. In descriptive imagination the approach taken to reach this end is often one of benchmarking best in class competitors. Benchmarks can be established by carefully describing traits and characteristics that make competitors successful (e.g. Davenport, 1993; Hammer and Champy, 1993). David Kearns, CEO of Xerox Corporation, defines benchmarking as “the continuous process of measuring products, services, and practices against the toughest competition or those companies recognized as industry leaders” (Kearns, cited in Hart, 1994). Indeed, when Xerox, in the late 1970s, compared U.S. made products to those of its Japanese affiliate, the company was amazed to discover that they were selling at prices equivalent to U.S. manufacturing costs. By 1983 Xerox had incorporated benchmarking as a key element in its corporate-wide improvement effort (see Harrington, 1991: 222). The central tenet is that such benchmarks need to be realistic, even if they require a stretch, and attainable within the company’s current environment (Harrington, 1991). Areas for benchmarking include, but may not be limited to: financial performance, quality, service ratings, cycle time, brand awareness, and market share (Johnson, 1988, 1994).

A second key challenge in establishing a position is to deliver a value proposition, or set of benefits different from those that competitors offer. Often, in descriptive imagination, the current strategy provides the logical basis for generating value
propositions for customers. As Porter (2001) admonished his readers in a very recent contribution:

“Strategy requires a strong focus on profitability rather than just growth, an ability to define a unique value proposition, and a willingness to make tough trade-offs in choosing what not to do. A company must stay the course, even during times of upheaval, while constantly improving and extending its distinctive positioning. A company must define a unique value proposition that it will stand for, even if that means foregoing certain opportunities. Frequent corporate reinvention then, is usually a sign of poor strategic thinking and a route to strategic mediocrity” (Porter, 2001: 71-72).

Porter’s quote illustrates that descriptive imagination is based on the appreciation of obvious alternatives to establishing positions relative to existing competitors. These positions are obvious in the sense that they represent the types of alternatives that are aimed at long-term extension of the firm’s current strategy, e.g. extending its market share within both end-customer and distribution channel segments by extending its current product lines and/or penetrating existing and new customer segments. Typically such moves include six alternatives stemming from current strategy:

1. Extending the variety of models, styles, or types of each product within each of the firm’s product lines.
2. Adding new products to one or more of the existing product lines.
3. Making the firm’s current products available to customers in new geographic areas.
4. Making additions to the current product lines or products available to customers in new geographic areas.
5. Penetrating new distribution channels with the existing products.

General Motors provides a case in point in the literature. In the face of deteriorating marketplace performance over a number of years, the car manufacturer sought strategies that could help it regain market share and compete more efficiently. The company first changed some of its core operating processes, including forcing its internal suppliers to compete directly with outside vendors. This helped General
Motors to choose among its internal and external suppliers in order to increase quality and decrease the price of its parts. This in turn led to improved product functionality and quality, and enhanced the firm’s image and reputation in the eyes of existing and potential customers (Business Week, June 1992, cited in Hart, 1994: 283).

4.2.3. Defending position

As the previous discussion illustrated, the focus of establishing position is a long-term one. The strategic logic in the descriptive mindset is one of ‘fortifying and defending positions,’ as Eisenhardt and Sull (2001: 109) have succinctly summarized it. As was previously explained, the ‘fortify and defend’ logic suggests that defending a position translates into extending the current strategy that leads to a particular position (Porter, 2001: 71) The question arising from this long-term focus is how to best defend the position against competitors, so as to reinforce the position attained.

As Mintzberg and Lampel (1999) have recently illuminated, defending and fortifying a position once attained can be found in Porter, and it is also present in earlier analyses by the Boston Consulting Group, and can even be traced back to its military origins (e.g. Clausewitz, 1998). The common denominator in these contributions is that strategy making is about exploiting generic positions selected through formalized descriptions of industry structure, and that industry plays a central role in determining and limiting the latitude with which such positions can be established and defended (e.g. Teece, Pisano, and Shuen, 1997; Rumelt, Schendel, and Teece, 1994).

As was described previously, the rents accruing to firms who succeeded in staking out a favorable position in a given competitive context, are so-called ‘monopoly rents.’ In the descriptive mindset, firms in an industry earn rents when they are able to impede the competitive dynamics prevailing in a particular industry (in either factor or product markets). Interfering with these forces is desirable from the viewpoint of industrial economics, because perfect competition would drive economic returns to zero (Teece, Pisano, and Shuen, 1997: 511).

The ultimate objective of defending position is thus to secure monopoly rents over the long term (an endeavor Porter called ‘sustaining competitive advantage,’ see Porter, 1985). Logically, to the extent that in neoclassical economics competition would erode the extra profits earned by successful firms, leaving just enough profit to pay for factor costs calls for impediments to the elimination of abnormal returns (Rumelt,
Schendel, and Teece, 1994). In the literature, the most important tools suggested for achieving this end are erecting strong barriers to entry, and delineating so-called ‘generic strategies’ that interfere with free competition and thus allow for abnormal profits in the long-run (e.g. Rumelt, Schendel, and Teece, 1994; Teece, Pisano, and Shuen, 1997; Nelson, 1991). The first tool for defending a position is discussed here, whereas the second tool is discussed in the section that follows.

Average industry profitability is likely to be influenced by potential as well as existing competitors. The concept typically used in the literature for describing the threat of entry is *erection of entry barriers* (e.g. Porter, 1985). Porter describes the function of entry barriers as acting to prevent an influx of firms into an industry whenever the profits, adjusted for the cost of capital, rise above zero (Porter, 1994: 178). Entry barriers can take many different forms. Some barriers tend to reflect intrinsic physical or legal obstacles to entry. For example, the existence and efficacy of international patents on aspartame (NutraSweet) and other artificial sweeteners can impede entry into new segments of that industry (Porter, 1994: 179).

The most common forms of barriers to entry are the type and scale of investment required to enter a particular industry as an efficient competitor. The aluminum industry is a telling example: it requires enormous capital stock to enter this industry on an integrated basis, since an efficient integrated facility would cost several billion dollars. Such a facility would only account for 5 percent of worldwide demand, a figure low enough to have led to over-capacity and soft prices (Porter, 1994: 179). Similarly, well-established brand names can represent a formidable barrier to entry, e.g. in the case of Coca-Cola. However, it must also be appreciated that particularly in fast-moving consumer markets, established brand names can be a double-edged sword, particularly when “kids start wearing T-shirts that say ‘just don’t do it,’ it’s a bit late to think about re-vitalizing your brand” (Hamel, 2000: 55). Particularly in markets where switching costs are low for consumers, deteriorating brand-awareness can be disastrous (Hamel, 2000).

*Defending a position in an Internet-enabled context* can be particularly daunting, if seen in the light of the Internet’s effect on barriers of entry. As Shapiro and Varian elaborate, the Internet would effectively reduce barriers to entry, such as the need for a sales force, access to channels, and physical assets. Similarly, it is very difficult to

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7 The original slogan, by the US sports apparel manufacturer Nike, proclaimed: ‘Just Do It!’
keep Internet applications proprietary, since imitability tends to be very high. This has recently been echoed by Porter (2001) who argues that on the Internet, buyers can often switch suppliers with just a few mouse-clicks, and Internet technologies are systematically reducing switching costs even further. For example, companies like PayPal provide settlement services or Internet currency that enable customers to shop at different sites without having to enter personal information or credit card numbers (Porter, 2001: 68). Evans and Wurster forecast that this trend is likely to increase rather than decrease, since effectively new businesses emerge whose revenue stream is derived from providing convenient navigation, linking suppliers with customers or vice versa, though so-called ‘reverse auctions’ (Evans and Wurster, 2000).

4.3. Step three: Realizing imaginative strategies

The previous sections ascertained what the company ‘might do,’ and what it ‘can do.’ This section discusses what the company ‘needs to do’ in order to sustain sound navigation in the competitive landscape, so that the company does not gradually lose its focus on the demands of its competitive environment. The imagination levers in this step include a clear discrimination of the generic strategies to be followed, cultivating an alertness, or ‘angst’ to competitors’ moves, with the ultimate objective of realizing and sustaining a ‘fit’ with the environment, in line with Sun Tzu’s framework.

4.3.1. Discriminating generic strategies

The distinguishing feature of descriptive imagination in strategy making is its propensity to focus on a ‘disciplined’ extension of the current strategy in line with the descriptions of the environment gathered through experience or analysis (Roos and Victor, 1999). In Porter’s words:

“Having a strategy is a matter of discipline” (Porter, 2001: 70).

According to the literature, descriptions of the competitive environment help the strategy maker clarify the range of options available. The literature of descriptive imagination in strategy making has yielded a widely accepted framework for discriminating between the range of options available (see Porter, 1980, 1985). The framework’s ultimate objective is to establish and sustain the financial viability of the venture. In the words of Porter:
The creation of true economic value becomes the final arbiter of business success. Economic value for a company is nothing more than the gap between price and cost and its reliability measured only by sustained profitability” (Porter, 2001: 65).

In order to achieve the objective of financial profitability, Porter’s framework prescribes the discrimination of so-called ‘generic strategies.’ The generic nature of the strategies proposed would suggest their robustness over time and across contexts. Indeed, the relevance across contexts (industries and countries) of Porter’s framework for discriminating generic strategies, has been established in the literature from the wide range of applications it enjoys, both in terms of different industries (as diverse as banking, shipping, and hospital services, see Campbell-Hunt, 2000), and countries as diverse as Ireland, Portugal, and Korea (see Porter, 1990).

The generic strategies’ relevance over time is a central tenet in descriptive imagination (e.g. Porter, 1985), even if less thoroughly validated empirically than the framework’s robustness across contexts. As a matter of fact, research to date has produced largely equivocal results as to the durability of advantage (e.g. Campbell-Hunt, 2000). Called the Law of Nemesis, economists assert that ‘nothing good lasts forever,’ in other words that competitors will invariably find ways to share the wealth of the market leader. Overall sustainability seems to be matter of degree (e.g. Day, 1994), and would be contingent on the discriminations made among different types of generic strategies.

Several authors agree that the framework can be seen as making discriminations on four levels of analysis (see, e.g. Campbell-Hunt, 2000; Porter, 2001; Robinson and McDougall, 1998). First, a differentiation is made on the basis of whether or not the firm has some distinctive advantage relative to its competitors. On a second level a scheme is introduced for delineating the basis of that advantage (cost-based or differentiation-based). Third, a heuristic is offered for describing firms’ competitive strategies according to their marked scope (focused or broad). Finally, a theoretical proposition is offered regarding the performance implications of cost- or differentiation-leadership positions: that failure to discriminate between them leads to inferior performance (‘stuck in the middle’).
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Cost minimization, the first generic strategy, builds on a philosophy of being a lower-cost producer than one’s competitors, and generating alternatives that keep the cost structure low. Increased rivalry in many industries has led many companies to pursue cost-reduction alternatives. Manifestations of this trend include, but may not be limited to, experience curve effects, total quality management, business process reengineering, and enterprise relationship planning. The most recent manifestation has been Internet-enabled approaches to improve operational effectiveness and decrease costs by increasing the exchange of real-time information, and enabling improvements throughout the entire value chain (e.g. Porter, 2001). It must furthermore be emphasized that in the descriptive orientation,

“simply improving operational effectiveness does not provide competitive advantage. Companies only gain advantages if they are able to achieve and sustain higher levels of operational effectiveness than competitors” (Porter, 2001: 71).

Sustaining advantage based on cost minimization can be arduous, since competitors tend to emulate these through best practices benchmarking. Best practice competition can eventually undermine the profitability of an entire industry, because it could lead to strategy convergence with many firms doing the same things in the same ways (Porter, 2001; Hamel, 2000).

Indeed, due to the nature of Internet applications, the sustenance of cost-leadership tends to become more difficult than ever (e.g. Shapiro and Varian, 1999; Hamel, 2000; Evans and Wurster, 1997, 2000). The openness of the Internet combined with advances software architecture, development tools, and modularity (e.g. Eisenhardt and Brown, 1998, 1999), tends to make the design and implementation of cost-saving applications relatively quick and easy. Porter illustrates this using the example of a U.S. drug store chain that was able to implement a complex Internet-based procurement system in just 60 days (Porter, 2001: 71). Thus, resulting improvements in operational effectiveness tend to be broadly shared among competitors in an industry, which calls their contribution to establishing and maintaining a distinctive position into question (Porter, 2001).

As the value of cost leadership for the purpose of strategic positioning is undermined, the promise of advantage based on differentiation is accentuated. If a company finds
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it hard to be operationally better than its rivals, another way to generate higher levels of economic value is to gain advantage by competing on the basis of differentiation, which is the second generic strategy. Differentiation creation defines alternatives that enhance the organization’s competitive posture, that is, how the company distinguishes itself from its competitors in the eyes of the customer (Porter, 1985, 2001; Lyles, 1994). The emphasis in the differentiation strategy is on identifying potential ways in which the firm can differentiate itself in each of its customer segments. The sources of differentiation vary considerably across industries and firms, and can include, but may not be limited to, unique market positions (market share as well as reputation), and unique product features. Product features have to be upgraded continuously for them to stay ahead of competitors. This is vividly illustrated by the Japanese consumer electronics market where Sony had to introduce 160 versions of the Walkman to withstand the intense rivalry in this market segment (Day, 1994: 304).

A final challenge in discriminating among types of generic strategies revolves around the assumptions that guide discrimination. An important step in assessing the feasibility and promise of a type of generic strategy would be to isolate the assumptions underlying the discriminations made. The literature provides rich insights into the biases and incomplete understandings of strategy makers (e.g. Mintzberg and Lampel, 1999). For the purpose of this dissertation three critical habits that could lead to misguided discriminations can be delineated. The first of these habits is that selective perception occurs when people tend to structure their decision-making processes in the light of their past experience, training, and culture, and can be traced back to Lao Tse’s writings (‘You see what you are’). The second habit is that availability of data resources can also significantly influence decision-making processes. The third is that emphasis is usually given to facts and opinions that are easy to retrieve. Often, however, these are data about past successes, which tend to be given greater weight than future adversity (Probst, 2000). The likely result is underestimation of competitors’ ability to gain market acceptance and penetrate previously secure markets (Day, 1994; Kim and Mauborgne, 1999a)

4.3.2. Cultivating competitive angst

Clive Weil, former Chief Executive Officer of ‘Game,’ a South African retail chain, coined the concept of ‘competitive angst’ to describe the way Game worries about competition (Nasser and Vivier, 1995: 101). ‘Competitive angst’ would seem a very
apt and succinct description of the mindset underlying descriptive imagination in strategy making:

“Competitive angst resembles the fear of the hunted, the wariness of the warrior and the spirit of the underdog.... This angst is displayed in the form of a relentless drive to improve the edge over competitors.” (Nasser and Vivier, 1995: 102, emphasis added).

The ultimate objective of cultivating competitive angst is sustained competitive dominance relative to competitors in a particular industry, as evident in the writings of competitive strategists such as Porter (1980, 1985), and is epitomized in the concept of relative competitive advantage. The consensus among authors in the descriptive realm argues that while it is tempting for companies to define the basis of their businesses’ competitive advantage in absolute terms, such as selling products at the lowest price, or offering the best quality service, it can obscure an important issue. What often matters in the marketplace is not how good or bad a product is in absolute terms, but whether any or all of these attributes are perceived as being superior to those offered by competitors (e.g. Gupta, 1994; Rumelt, Schendel, and Teece, 1994; Porter, 1996).

A telling example of cultivating competitive angst can be gained from observing the struggle of General Motors against its three major Japanese competitors (Toyota, Nissan, and Honda) in the eighties. According to a ten-year longitudinal study, in 1980 General Motors had, on average, 110 problems per 100 cars compared to the 43 of the Japanese competition. By 1990 the figure had been reduced to 40 problems per 100 cars. However, in the interim the Japanese companies had achieved a failure rate of 17. These data clearly suggest that General Motors had made a remarkable improvement, but the data also suggest that General Motors still suffered from a competitive disadvantage in relative terms (Gupta, 1994: 93). Thus the intent of cultivating competitive angst is to differentiate the firm and its product offerings from current competitors as understood and perceived by customers.

Many of the most successful companies seem to obsessively cultivate competitive angst. Jack Welch of General Electric, for instance, explained his efforts to regain competitiveness for General Electric in its key markets as follows:
“To be content to be the third or fourth position in your industry is foolish. One morning you will wake up and find that number one or two has changed the rules of the game. What use is all your effort then? You may well find that you have slid from being third or fourth to being sixth or seventh” (Welch, cited in Nasser and Vivier, 1995: 33).

As the quote by Jack Welch illustrates, cultivating competitive angst implies a conscious decision to delineate (a) areas where the company must remain superior to competitors, (b) areas where the company would accept the possibility of being on par with competitors, and (c) areas where the company would accept the possibility of being at a disadvantage vis-a-vis competition (Gupta, 1994: 93). Indeed, several authors agree that it may not always be necessary for the firm to be superior to competitors in all areas (e.g. Porter, 1980; Ghemawat, 1994; Porter, 2001). However, a lack of superiority in critical dimensions implies that the firm’s current position is unlikely to be sustained.

Many tools and conceptual aids for cultivating competitive angst emanating from the descriptive imagination literature emphasize this point. The Boston Consulting growth share matrix, for example, can be seen as one tool to cultivate competitive angst among strategy-makers in that firms’ different relative positions in a growing market are visualized (from unfavorable positions such as ‘poor dogs,’ to favorable ones such as ‘stars’ (Henderson, 1979; Belohlav, 1996). Similarly, competitor benchmarking (e.g. Garvin, 1993; Hammer and Champy, 1993), as well as competitive intelligence gathering (e.g. Davenport and Beck, 2001) was described as a conceptual aid compelling businesses to position their performance relative to emerging practices of industry leaders, and ultimately compelling businesses to cultivate competitive angst.

4.3.3. Creating a fit with the environment

One of the most widely shared and enduring assumptions in crafting strategy in the descriptive mindset is that the appropriateness of a firm’s strategy can be defined in terms of its fit, match, or congruence with the environmental or organizational contingencies facing the firm (e.g. Andrews, 1971; Chandler, 1972; Porter, 1980, 1985; Venkatraman, 1989). Nadler and Tushman define fit or congruence as “the degree to which needs, demands, goals, objectives and/or structure of one component are consistent with the needs, demands, goals, objectives, and/or structure of another component” (Nadler and Tushman, 1980: 40). In the descriptive orientation, fit would
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imply a match at a single point in time. Venkatraman, after having comprehensively reviewed research on strategic fit, concludes that “the existing structures have focused on static, cross-sectional approaches for specifying and testing fit within strategy research” (Venkatraman, 1989, cited in Zajac, Kraatz, and Bresser, 2000: 429).

Fit with the competitive environment is thus a core concept in descriptive imagination frameworks and the pursuit of strategic fit has been viewed as having desirable performance implications (Ginsberg and Venkatraman, 1985; Venkatraman, 1989; also implicit in Porter, 1989; 1985). However, despite the concept’s criticality, relatively little explicit attention to the concept of fit has been found in the recent strategy process and strategy content literature. Research on ‘fit’ emanated mainly from the strategic change and organizational learning literature in which it is argued that organizational contingencies have to be appropriately matched with environmental contingencies, so as to realign the organization with the prevailing realities (e.g. Beer and Nohria, 2001; Senge, 1990). Little prior research could be found to explicitly conceptualize fit in strategy making (with the exception of Zajac, Kraatz, and Bresser, 2000).

The reason for this lack of explicit attention has been mainly ascribed to the multidimensionality of strategic fit. As Zaja, Kraatz, and Bresser discovered, methodological challenges to the study of fit abound, given that simple, bivariate techniques are ill suited to capture the multiple environmental and organizational contingencies that can affect strategic fit. The authors conclude that the literature seems rather ambiguous in proposing that particular structures are more appropriate for given environments, and that changes in environmental conditions require a reassessment of the choice of structure (Zajac, Kraatz, and Bresser, 2000). What seems clear, however, is that the descriptive mindset proposes a specific causality: environmental conditions determine structure. The implication arising is that creating fit with the environment is essentially an endeavor to create accurate descriptions of the environment, and matching the structure accordingly (Zajac et al., 2000: 430).

Further insight into creating fit with the firm’s competitive environment as a lever for descriptive imagination, can be gained from revisiting the classic contributions by Andrews (1971), and Chandler, (1962). As Zajac et al. explain, the concept of fit has theoretical roots in contingency perspectives found in both the strategy and organization theory literatures. Revisiting Andrew’s and Chandler’s earlier work
suggests that the initial strategy paradigm was rooted in the concept of ‘matching’ or ‘aligning’ organizational resources with environmental opportunities and threats (Zajac et al., 2000: 431). Indeed, the original work by Chandler, ‘Strategy and structure,’ emphasizes the interdependency of structural alignment with strategy. As Miles and Snow illustrate: “the process of achieving fit begins with, conceptually at least, aligning the company to its market-place... this process of alignment defines the company’s strategy” (Miles and Snow, 1994; cited in Zajac et al., 2000: 429). In case of a ‘misfit’ with the environment, the strategist is admonished to reassess the strategy against the new contingencies, and to create a new strategy better suited to the new status quo.

Finally, researchers argue that fit with the environment is typically a matter of degree and that ‘misfit’ is associated with undesirable performance implications (e.g. Johnson, 1994). Sometimes called ‘strategic drift,’ such misfit between the competitive environment and the firm is said to materialize when the organization’s strategy gradually, and usually imperceptibly, loses its focus of the demands of its competitive environment. As Miller pointed out, the root cause of this development is that firms tend to become the victims of their own past successes. A telling example is Digital Equipment Corporation (DEC). DEC’s success in the seventies and eighties was based on the design of its technologically sophisticated microcomputers. As a result, the company fostered an engineering monoculture in which technological fine-tuning reigned and customers’ needs for smaller; more economical, and user-friendly computers were ignored (Miller, 1990, cited in Johnson, 1994: 421).

5. A three-step approach for creative imagination

The previous section dealt with descriptive imagination. This section discusses the second important thrust in strategy making, creative imagination. The framework below (Figure 6) is an elaboration of the blueprint for the strategy-making matrix, in that it attempts to cluster the activities associated with the second thrust of strategy making (creative imagination), using the three generic steps in the strategy-making process: namely envisaging, conceiving, and realizing imaginative strategies. The activities associated with creative imagination (the strategic imagination levers) are derived from the critical analysis of existing strategy content and process research conducted earlier in this chapter.
Figure 6: Creative imagination as one of the three basic thrusts in strategy making (source: author).

As with descriptive imagination, clustering the nine imagination levers under the three generic steps of the strategy-making process seeks to eliminate the two key weaknesses characteristic of earlier work on strategy. First, the critical analysis conducted at the beginning of this chapter has shown that previous research in strategy content has mostly focused on ‘what’ strategic positions of the firm lead to optimal performance under varying environmental circumstances, without simultaneously considering the three generic steps of the strategy-making process, i.e. the question ‘how’ such positions can be reached in the first place. Second, the strategy-making matrix suggests that creative imagination, while critical, is not a panacea. It represents only one of three basic thrusts in strategy making. The strategy-making matrix therefore complements creative imagination with two further thrusts, descriptive imagination, and challenging imagination.

Thus, for expository purposes,

- The present section elaborates on the nine individual levers for stimulating creative imagination shown in Figure 6. In line with Sun Tzu’s axiom, the three imagination levers in each step focus on the firm itself, the firm’s environment...
and the firm’s partners/competitors in order to provide a mutually exclusive and collectively exhaustive outlook on strategy making.

- The section that follows focuses on challenging imagination, so as to achieve an integrated outlook on strategic imagination in line with the Spannungsfeld approach proposed in section 3.1.

5.1. Step one: Envisaging imaginative strategies
The first step in creative imagination comprises three imagination levers. The first is called concentrating on core competencies. Subsequently a strategic intent needs to be propagated in order to identify opportunities for applying firm resources and competencies. The third imagination lever discusses how competitors can be transcended in order to preempt them from taking advantage of these opportunities.

5.1.1. Concentrating on core competencies
Creative imagination revolves around a fundamental issue. This issue is the conceptualization of the firm, not as a collection of discrete strategic business units or product/market positions (as in descriptive imagination), but as a collection of core competencies that draw on certain common resources (e.g. Wernerfelt, 1984; Prahalad and Hamel, 1990; Barney, 1991). The rationale for this conjecture is that most products require the services of several resources and most resources can be used in different product markets. This has let to the insight that by specifying the scope of the firm’s activities in different product markets, it is possible to infer the minimum necessary resource commitments. Conversely, by specifying a resource profile for a firm, it is possible to find the optimal product/market activities (Wernerfelt, 1984: 171).

It is interesting to compare the conceptualization of the firm as a bundle of resources versus its conceptualization as a bundle of product/market positions. The former is the realm of creative imagination, the latter of descriptive imagination. While descriptive imagination has largely focused on developing accurate descriptions of product/market positions, creative imagination asks how these arise in the first place and focuses on antecedent organizational structures that create product market positions (e.g. Barney, 1991). As Hamel illustrates, conceiving the firm as a portfolio
of core competencies suggests that inter-firm competition, as opposed to inter-product competition, is essentially concerned with the acquisition and exploitation of resources, suggesting that competitive advantage would be highly associated with organizational resources (Hamel, 1990: 83). A key question therefore is to identify which core competencies the firm has and which ones it needs to develop (e.g. Prahalad and Hamel, 1990).

The literature shows that answers to this question are based on the assumption that firms’ resource and competence endowments are heterogeneous. Teece, Pisano and Shuen (1997) have identified reasons why such capabilities and resources are heterogeneous. First, business development is seen as a complex and organizations may often lack the capacity to develop or acquire new competencies swiftly enough. Also, some assets such as tacit knowledge may not readily be tradable, because it is generally difficult to articulate, and therefore difficult to transfer and trade (Polanyi, 1958, 1966). Therefore, the authors argue, resource endowments cannot equilibrate through factor input markets, hence the assumption underlying the creative approach to crafting strategy: critical resources can only be acquired partially and consequently need to be developed internally (Teece et al., 1997).

Most authors in the creative imagination realm explain that the key to understanding resource-based strategy making is to distinguish critical from less critical resources (e.g. Barney, 1991). The next logical step in creative imagination is therefore to decide which resource; capability or skill may be critical in providing sustainable competitive advantage (Roos and Roos, 1996; Nanda, 1996). The strategic management field seems deeply involved in identifying those resources which would yield sustainable competitive advantage, i.e. the most critical resources. This concern is understandable from the practitioner’s perspective, since, if a manager knows which components of the portfolio of organizational resources are critical from a strategic point of view, he can focus his/her attention on them (Hamel and Prahalad, 1993, 1994; Hamel, 1991).

Different scholars have held differing views on appropriate criteria to be used to differentiate critical from non-critical resources. Barney (1991) proposed the criteria of value creation for the company, rarity compared to competition, as well as imitability, and substitutability. Prahalad and Hamel (1990: 84) distinguished what they called core competencies from ‘non core’ competencies as follows: core
competencies should be suitable for application in many different markets, they should create a significant contribution to customer value, and consonant with Barney, competitors should have difficulty in imitating them.

The answer to the question of which organizational resource accommodates these criteria, i.e. which is most strategically significant, also seems to be unclear in the literature. Many scholars are ambiguous in their terminology and a review of the literature reflects considerable diversity. A plethora of phrases including ‘firm resources’ (Barney, 1991), ‘invisible assets’ (Itami, 1987), ‘knowledge assets’ (e.g. Davenport and Prusak, 1998), and ‘intellectual capital’ (Sveiby, 1997) is used. The definitions are sometimes tautological; resources are defined as firm strengths, and firm strengths are subsequently defined as strategic resources.8 In these characterizations, competencies are, by definition, those resources that yield sustainable competitive advantage. Seeing competitive advantage from a resource-based perspective presumes (core) competence, and research has shown that until the substance or nature of competence is defined, only a substitute for the idea of competence is established, not an explanation (Spender, 1996b; Nanda, 1996).

An emerging consensus among scholars (Roos and Roos, 1997; Nanda, 1996; Spender, 1996b) proclaims that the prevalent terminological ambiguity would prescribe that organizational knowledge, whether referred to as ‘invisible assets’ (Itami, 1987), ‘absorptive capacity’ (Cohen and Levinthal, 1990), ‘core competencies’ (Prahalad and Hamel, 1990), ‘strategic assets’ (Amit and Schoemaker, 1993), ‘core capabilities’ (Kogut and Zander, 1995), or ‘organizational knowledge’ (Nonaka and Takeuchi, 1995), can be viewed as the only resource that fulfils the foregoing criteria, and should therefore be seen as the most strategically significant resource. Prahalad and Hamel substantiate this view as they themselves often use core competencies and knowledge interchangeably: “core competence does not diminish with use, unlike physical assets, which do deteriorate over time, competencies are enhanced as they are applied and shared. But competencies still need to be nurtured and protected, knowledge fades if it is not used” (Prahalad and Hamel 1990: 82).

With the recognition of the strategic importance of knowledge as the most critical, or ‘core’ competence, has presumably come the acknowledgement that a new,

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8 See the heated debate between Priem and Butler and Barney on the tautology issue (Priem and Butler, 2001a,b; Barney, 2001).
‘knowledge based’ (e.g. Grant, 1996, 1997; Spender, 1996a,b), or ‘organizational epistemology’ (von Krogh, and Roos, 1995; Roos von Krogh, Roos, and Slocum, 1994) approach is needed to conceptualize strategy making. In this area of focus, the analysis of competitive performance is scaled down to the level of knowledge, thereby (often implicitly) assuming knowledge as the appropriate unit of analysis (see, e.g. Roos and Roos, 1997; von Krogh and Roos, 1995; Nonaka and Takeuchi, 1995).

Finally, literature emphasizes that while critical, the knowledge component could represent only one of a variety of components comprising core-competencies. Prahalad, Fahey, and Randall therefore emphasize that core competence is a concept that is often misunderstood (Prahalad et al., 2001: 243). The key to an appropriate understanding of competence-based strategy making is that although core competencies incorporate a knowledge component, they also involve governance processes inside an organization (e.g. the quality of relationships across functional knowledge domains within a business unit, or across business units in a multi-business firm, e.g. Prahalad and Hamel, 1990). According to the literature, another important component of core competencies would be collective learning across levels, functions, and business units. Lastly, technology constitutes an important component of core competencies. However, core competence would only result if firms harmonize multiple technologies. For example, Sony’s expertise in miniaturization requires expertise in several technologies such as microprocessors, miniature power sources, power management, and user-friendly design (Prahalad, Fahey, and Randall, 1994: 262).

5.1.2. Propagating strategic intent

As was discussed earlier, a key tenet in descriptive imagination is the quest to establish a fit between existing resources and emerging opportunities. Essentially the idea of strategic fit emphasizes the trimming of ambitions to match current resource endowments by firms. However, recent research has discovered that the most successful companies were those that did the exact opposite: nurturing ambitions that were out of all proportion with existing resources, and focusing on seemingly unattainable goals. This represents an orientation that was called ‘strategic intent’ (by Hamel and Prahalad, 1989; or ‘value innovation’ by Kim and Mauborgne, 1997a, 1999a,b).
Indeed, research has discovered that the most successful companies were those whose ambitions were un-constrained by their current resource endowments. To illustrate: research indicates that companies that have risen to global leadership over the past 20 years invariably began with ambitions that were out of all proportion with their resources and capabilities. Major examples cited in the literature include, Toyota versus General Motors, CNN versus CBS, and, most recently, Easyjet versus all major airlines (Sull, 1999; Hamel and Prahalad, 1993).

Underlying strategic intent is the core idea of ‘numerator management’ (Hamel and Prahalad, 1994a: 125). Numerator management refers to aspirations to increase the numerator of the ROI equation (i.e. net income), rather than decreasing the denominator (i.e. investment, net assets, or capital employed). The challenge with numerator management is that it is generally more difficult to raise the denominator than it is to raise the numerator. For example, it is often considered more difficult to raise the net income of a corporation than it is to cut assets and head count. To increase the numerator, managers must have a sense of where the opportunities lie, must be able to anticipate changing customer needs, and must have invested in building new competencies. Therefore, under intense pressure to improve ROI, managers often turn to the denominator as a lever for achieving relatively fast and sure results (Hamel and Prahalad, 1994a: 125).

The recent infatuation of many companies with downsizing, rightsizing, de-layering, lean management, business process reengineering, and total quality management can be seen as manifestations of the quest to drive down the denominator (e.g. Hamel, 2000). The ultimate objective of these endeavors to reduce the denominator would be to catch up with the competition in terms of efficiency. The very essence of competitive strategy emphasizes the need for managers to work hard to achieve the competitive advantages of their next (global) rivals. Even the very vocabulary used in this stream of research seems indicative of this preoccupation (e.g. ‘competitive strategy,’ ‘competitive advantage,’ competitive benchmarking,’ see Kim and Mauborgne, 1999a,b). However, several scholars have discovered that often the quest to reduce the denominator typically leads to a reproduction of the cost and quality advantages global competitors already enjoy (e.g. Hamel, 2000; Hamel and Prahalad, 1994a; Kim and Mauborgne, 1999a,b). As Hamel and Prahalad put it: “imitation may be the sincerest form of flattery but it will not lead to competitive revitalization” (Hamel and Prahalad, 1989: 63).
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To illustrate: according to recent empirical research, Xerox was the dominant player among copier manufacturers in the 1970s, the brand name even becoming synonymous with copying itself (Hamel, 2000). Threatened by a loss of market share to Japanese competitors, Xerox benchmarked its Asian competitors, re-engineered its processes, and streamlined its customer service to eventually attain radical efficiency improvements. Yet Xerox never regained its dominance in the copier market. While it nearly matched, and in some areas (e.g. customer service) even surpassed its Japanese rivals, it failed to regain its original profitability. Researchers argue that the reason for this can ironically be ascribed to exactly its success in matching its Japanese rivals: Xerox essentially got better without getting different (e.g. Hamel and Prahalad, 1991: 83).

The quest to gain the efficiency, quality and cost advantages of competitors often leads to strategy convergence in an industry, i.e. a situation in which many players simultaneously pursue different strategies (Kim and Mauborgne, 1999a,b, Hamel, 2000). This can have disastrous effects on profitability, because it can eventually lead to price wars, (Porter, 1980). These drawbacks suggest the benefits of original strategies that focus on the numerator, rather than the denominator. Sun Tzu, illuminated this point in a military context 3000 years ago: “all men can see the tactics by which I conquer, but what none can see is the strategy from which victory is evolved” (Sun Tzu, cited in Hamel and Prahalad, 1989: 64).

Overall, literature suggests that propagating strategic intent seeks to focus the manager to abandon the ‘feasibility sieve’ (Hamel and Prahalad, 1989: 66) that is usually used to match emerging opportunities with existing resources, and to nurture ambitions that are out of all proportion to the company’s current resources and capabilities. Whereas denominator management focuses on establishing and maintaining a fit between opportunities and resources, propagating strategic intent focuses on the numerator and implies a sizable stretch in goals for an organization. By implication the company is forced to make the most of limited resources when focusing on stretch goals. Thus, whereas denominator management focuses on creating and sustaining a fit between existing resources and current opportunities, propagating strategic intent seeks to create an extreme misfit between resources and ambitions.
5.1.3. Transcending competitors

With strategic intent established, a further lever for unleashing creative imagination is to *transcend* competitors, rather than trying to *catch up* with them. As Hamel puts it, “catching up is necessary to stay in the game but the winners invent new games” (Hamel, 2000: 11). The key in this lever is to make the competition irrelevant, rather than attempting to beat it (Hamel, 2000: 14). The Chinese military strategist Sun Tzu admirably condensed this mindset in 2600 BC:

“To win without fighting is best. Only do battle when there is no choice” (Sun Tzu and Cleary, 1997: 47).

Sun Tzu’s axiom can usefully be applied to less martial endeavors in the strategy realm. Indeed, a review of the literature on strategy content as well as strategy process suggests several drawbacks associated with the focus on ‘fighting’ competitors. The most important being that traditional competitor benchmarking is often like a “snapshot of a moving car... which yields little information about the car’s speed or direction” (Hamel, 1989: 64; emphasis added). Interestingly, the proponents of benchmarking themselves have defined the term as “an ongoing investigation and learning experience that ensures that best industry practices are uncovered, analyzed, adopted, and implemented” (Garvin, 1993: 86). Along the same lines, Hammer and Champy defined benchmarking as “looking for companies that are doing something best and learning how they do it in order to emulate them” (Hammer and Champy, 1993: 132, cited in Orgland, 1995). However, as Hamel and Prahalad describe the results of their research,

“our most successful companies weren’t obsessed with their competitors... What counted was not so much how they positioned themselves against long-standing rivals, but how creatively they used their core competencies to create entirely new markets” (Hamel and Prahalad, 1994a: ix).

As Hamel and Prahalad’s quote implies, *infatuation with competitors can lead to an inappropriate reflection of reality*. In anticipating the moves of existing competitors, companies focus on existing resources (human, technical, and financial) of present competitors. Through this lens the only companies seen as a threat would be those with sufficient resources to erode margins and market share in the next planning period (e.g. Kim and Mauborgne, 1999a,b). A case in point is the successes of nimble
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Japanese companies over their U.S. American rivals in the 1970s and 1980s. Research shows that in 1970 few Japanese companies possessed the resource base, manufacturing volume, or technical prowess of their U.S. American rivals. Komatsu, for example, was apparently less than 35 percent of Caterpillar, and Honda was much smaller than General Motors and had as yet not even begun exporting cars to the U.S. If General Motors and Caterpillar had extended their competitor analysis to include Honda and Komatsu, it would merely have underlined how dramatic the resource discrepancies were and how little threat consequently emanated from these companies (Hamel and Prahalad, 1989: 64).

Kim and Mauborgne (1996, 1999a,b) explained that the strategic imagination driven by the competition could have two latent effects that are ironically the exact opposite of what managers have in mind. First and foremost, it tends to put companies in a reactive mode. Often precious time and resources are spent in response to the ongoing competitive moves. Second, it can lead to imitative, rather than imaginative strategies. Companies accepted what competitors were doing and strove to do it better. However, according to Hamel (2000), the question is not one of getting better, but one of getting different, because the result of getting better would be increasingly convergent strategies. This in turn would leave little room for differentiation from the next rival and typically leads to price wars and eroding profit margins (Kim and Mauborgne, 199a,b; Hamel and Prahalad, 1994b).

In recognition of the drawbacks of an infatuation with competitors, a variety of authors have recently made a strong case for shifting the basis of strategy away from a focus on competitors to a focus on transcending competitors (e.g. Kim and Mauborgne, 1999a,b; Hamel, 1991, 1994, 1996). The next question then is how competitors can be transcended. To answer this question it is useful to adopt a more encompassing interpretation of ‘competition.’ Prahalad, Fahey, and Randall (2001) have recently provided a useful framework for thinking differently about competition. Their research has shown that it is important to recognize that today competition takes place on multiple planes. For the purpose of this dissertation, three planes can be delineated from the authors’ analysis: end products, core products, and core competence.

Competition on the level of core competence revolves around gaining a capacity to create new business by creatively combining core skills. The focus here should not be
on catching up with existing competitors, even if they seem much more resourceful. Instead the focus should be on what customers value most. To illustrate: a focus on competitors often fails to describe the considerable successes achieved by less resourceful companies such as Honda, and Komatsu over their much more resourceful rivals General Motors and Caterpillar when creatively combining their production skills (Prahalad et. al., 2001).

Competition on the level of core products revolves around a capacity to lead the development of new functionalities and the pace of product development. This often entails letting some established customers go. Indeed, Hamel and Prahalad have alerted their readers to the dangers of being led by existing customer demands (Hamel and Prahalad, 1994a, also Prahalad, Fahey, and Randall, 2001). Along the same lines, Kim and Mauborgne (1999a, 2001) emphasize that while it is important to focus on customers, it is often more important to pay attention to non-customers as well. SAP of Germany is an illustrative example. It has continuously renewed its customer base by moving aggressively from mainframe users to client-server users to mid-size and small companies. Hasso Plattner, a co-founder of SAP, explained: “non-customers often offer the greatest insights into where the market is moving and what we should be doing fundamentally different” (The New York Times, March 29, 1998).

Competition on the level of end products revolves around a capacity to manage what Prahalad, Fahey, and Randall call the ‘price/ performance gap.’ The key here is to focus on what Kim and Mauborgne have called ‘value innovation.’ These authors explain that “value innovation makes competition irrelevant by offering a fundamentally new and superior buyer value in existing markets and by enabling a quantum leap in buyer value to create new markets” (Kim and Mauborgne, 1999a: 43). In creative imagination it is therefore the drive offering a considerable leap in value that opens strategists’ imagination to the differences between what industries are competing on and what the mass of buyers actually values. CNN, for example, decided to drop the big name anchors, even though the industry had for a long time competed for them. This enabled CNN to produce 24 hours of real-time news at one-fifth of the cost of producing one hour of CBS news (Wall Street Journal Europe, March 6, 1997).
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5.2. Step two: Conceiving imaginative strategies

Conceiving strategies in creative imagination in mutually exclusive and collectively exhaustive ways starts with re-defining industry structure. Leveraging resources, the second lever in conceiving imaginative strategies, can be done internally by focusing on proprietary firm resources, or by co-opting resources from convenient sources external to the firm. This is an operation which this dissertation calls ‘building the intelligent enterprise.’

5.2.1. Redefining industry boundaries

An important lever in conceiving imaginative strategies in creative imagination is a re-definition of industry boundaries. To recall from descriptive imagination, the industrial organization view holds that industry structure determines, or significantly affects industry performance. For firms competing in a particular industry, this means that industry structure poses contingencies in terms of the types and ranges of competitive actions pursuable. As was discussed in the descriptive imagination lever ‘defining industry boundaries,’ the focus of descriptive imagination is largely on defining the industry in terms of product/market positions. Thus, the U.S. automobile industry can be defined in terms of the types of vehicles sold (e.g. utility versus sports cars), suggesting that competition revolves around a fairly homogenous set of major players, including General Motors, Volkswagen, and DaimlerChrysler.

However, literature shows that if the same approach is adopted to describe the credit card industry, a very different picture emerges. Increasingly, institutions other than banks are dominating the very profitable credit card market. According to Sampler (1998: 349), this trend was initiated with AT&T launching their own credit card in the mid-1980s. In the first year of operations, AT&T issued 12.5 million credit cards and became the seventh largest issuer of credit cards in the U.S. By 1995 non-bank credit card issuers controlled 40 percent of the consumer credit card market, and are on average much more profitable than retail banks. This development does not seem limited to the U.S. Indeed, in the U.K., with regard to basic savings and checking accounts, retail banks are facing severe competition from retail chains, such as Marks & Spencer, which are offering the full range of customer financial services (Economist, 1997, cited in Sampler, 1998).

This shows that increasing industry convergence and overlaps between industries emphasize the need to consider bases other than product/market positions to define
industry boundaries. Such redefining of industry boundaries attempts to focus the imagination of the strategy maker not only on the product/market positions, but also on the antecedent organizational resources and factor inputs that lead to the product/market positions in the first place. Seen from this perspective, industry boundaries can also be (re-)defined by focusing on creative organizational processes that lead to the product/market positions. This approach is in line with new strategy content literature, which has emphasized resources as the principal driver of firm profitability and strategic advantage (Wernerfelt, 1984; Barney, 1991; Prahalad and Hamel, 1990).

In view of the emphasis on firm resources as drivers of strategic advantage, it does not seem surprising that several scholars have proposed that industry definition can also be accomplished by looking at the resource, rather than product/market side as the basis. As Collis and Ghemawat (1994) explain, the traditional approaches to industry definition can usefully be supplemented by classifying industries in terms of the resources that dominate competition within them, and that are likely, therefore, to underpin firm success. It would appear that if a particular type of resource commitment is salient in a particular industry, investment in, and utilization of these resources are likely to play a critical role in crafting strategy imaginatively. The critical bases for redefining industry boundaries emerging from the literature (e.g. Collis and Ghemwat, 1994; Rumelt, 1987; Williams, 1992) are capacity-driven industries, customer- or service-driven industries, and knowledge-driven industries.

- In capacity-driven industries, capital investments tend to be relatively large in relation to cost or value-added (e.g. in the steel industry). In such industries, competition takes place mostly on price, while expenditures on research and development are typically limited. Capacity-driven industries tend, furthermore, to be mature, commoditized, and characterized by modest productivity improvement.
- Customer-driven industries tend to be characterized by relatively large investments in brands or consumer relationships (e.g. the sports industry). These industries tend to be less mature, commoditized, and static than capacity-driven industries.
- In knowledge-driven industries (e.g. the pharmaceutical industry) investments in research and development tend to account for the largest part of value-added. As a rule, knowledge-driven industries tend to be at the earlier stages of their
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Life cycles and more global than capacity-driven and customer-driven industries. Productivity typically improves very rapidly, and competitors often pay more attention to introducing new products and processes, than focusing on enhancing efficiency of existing ones.

The above typology suggests that in order to define industries in terms of the resources that dominate competition within them, it could be useful to consider the ratio of physical stocks to value-added, advertising, or marketing expenditures to value-added, and finally research and development expenditures to value-added. When an industry has a relatively high value-added in any of these dimensions, it can easily be defined in terms of dominant resources, which correspond to the three types of industries. Moreover, as the focus on knowledge-driven industries suggests, much research in the resource school of strategic management has recently shifted from focusing on tangible resources as a source of strategic advantage to intangible ones, which include tacit knowledge (e.g. Nonaka and Takeuchi, 1995), core competencies (Prahalad and Hamel, 1990), learning (Senge, 1990), and intangible assets, such as brand image or corporate culture (e.g. Itami, 1987).

Particularly important is information as a key resource for redefining industry boundaries. In a much-acclaimed contribution, Sampler (1998) made the point that in the ‘Information Age’ the key resource logically becomes information and knowledge. To the extent that information becomes increasingly critical in the extant industry environments, it seems promising to (re-)define industry boundaries in terms of the types of information exchanged in a particular industry (whether and to which extent information can be separated from the event generating the information). To illustrate: the SABRE airline computer reservation system represents a fundamental shift in the nature of competition among the key players in the airline industry by introducing seating and booking information. This information not only supports the transaction of booking seats, but has created an entire new source of value by creating the basis from which airlines can effect dynamic seat pricing based on current and historical load factors (Sampler, 1998).

Overall, creative imagination proposes that industry boundaries can be redefined by looking at the resource, rather than the product/market side as the basis for the drawing of industry boundaries. The critical implication for the strategy-maker is that this conceptualization suggests a very different set of competitors. In the case of the
credit card business, a narrow conceptualization based on product/market positions suggests a fairly homogenous set of competitors, including American Express, Visa, and MasterCard. However, when redefined, based on information as the key resource traded in the credit card business, the scope of analysis widens appropriately to include, e.g., retail chains and insurance agencies as critical players (e.g. Sampler, 1998; Hamel, 2000; Kim and Mauborgne, 1999a,b).

5.2.2. Leveraging internal resources

Hamel and Prahalad (1993) introduced a concept of strategy as ‘stretch and leverage.’ The main argument was the new contention that competitiveness is born in the misfit between a company’s resources and its managers’ goals. The concept of strategy as stretch and leverage was intended to complement what was perceived as the traditional contention of strategy as the fit between organizational and environmental contingencies (e.g. Porter, 1980, 1985; Chandler, 1962). The traditionalist paradigm, according to the authors, essentially viewed strategy as based on the relationship of the company and its competitors, and the allocation of resources among competing investment opportunities (Hamel and Prahalad, 1993: 77). This, according to the authors, left many resources under-leveraged. Likely outcomes of this inadequacy were described by two prominent corporate leaders: Jerry Junkins, the late CEO of Texas Instruments lamented, “If Texas Instruments only knew what Texas Instrument knows” (cited in O’Dell and Grayson, 1998: 154), this was echoed by Lew Platt, chairman of Hewlett Packard, “if HP knew what we know, we would be three times as profitable” (cited in Despres and Chauvel, 1999: 6).

In contrast, the new concept of strategy as leveraging resources already in possession of the company, complements descriptive imagination in that it provides an alternative frame in which the concept of stretch supplements that of fit, and where leveraging resources is seen as equally important to allocating them. The notion of leverage, i.e. the continuous search to get the most from the existing resources, is designed to enable companies to build for consistency, while simultaneously nurturing an appetite for risk (Hamel and Prahalad, 1993: 77). Among the resources prone to leverage, many researchers emphasize knowledge (e.g. Nonaka and Takeuchi, 1995, Davenport and Prusak, 1998). The reason for this seems to be the cost structure underlying the production of knowledge resources. Literature shows that the distinctive features of this cost structure become evident as one considers the implications of the so-called ‘law of diminishing returns,’ which argues that the more a given resource is used, the
smaller its incremental returns will be (e.g. Stewart, 1998). Many authors argue that this law loses its relevance in many industries. By contrast, the law of increasing returns actually seems to be characteristic of many industries (Roos, Roos, Edvinnson, and Dragonetti, 1998; Arthur, 1996).

The law of increasing returns argues that the more a given resource is used, the higher its incremental returns will be (e.g. Arthur, 1996). The economist Brian Arthur ascribes this tendency to the fact that the production of knowledge-intensive products is characterized by ‘up-front costs,’ i.e. the costs of product development (in other words, knowledge production costs) are very high relative to marginal production costs (in other words, knowledge leverage costs), which are generally low (Arthur, 1996; Hebler and van Doren, 1997). To illustrate: knowledge resources require early, high, fixed costs as an aggregation of data collection, assimilation, analysis and synthesis (as in software production, for example). Most knowledge resources therefore seem to be subject to economies of scale and scope. Such resources, once created, can be deployed at low marginal cost (i.e. the costs for copying the software developed to a CD, for example, see Grant, 1996; Spender, 1996a,b).

Two generic approaches to leveraging resources can be discerned from the relevant literature, namely recontextualizing resources and blending resources (see also Hamel and Prahalad, 1993). To recontextualize resources, companies need to invest in learning activities that allow them to draw from existing pools of resources inside and outside the company. Relevant elements of these pools need to be systematically identified and brokered across the contexts from which they originate. (Hamel and Prahalad, 1993: 79-83). In order to recontextualize resources, companies need to devise more efficient ways for timely extraction of a required resource from the reservoir of total resources (see, e.g. Grant, 1996; Spender, 1995a,b).

The literature shows that redistributing resources among the often-discrete loci of resource production (e.g. functional departments), however, is neither automatic nor easy. Particularly tacit forms of resources and knowledge often migrate slowly (see, e.g. Hedlund, 1994; Nonaka and Takeuchi, 1995; Davenport and Prusak, 1998; von Krogh and Roos, 1995). In fact, some components of the corporate resource portfolio may be entirely inaccessible to such recontextualization (Winter, 1987). Many authors argue that what differentiates companies from one another may be less the relative quality and depth of their resource-stocks than their capacity to draw from that
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stockpile (Prahalad and Hamel, 1990; Nonaka and Takeuchi, 1995). The ability to maximize, and capitalize on these tacit insights depends on a variety of critical success factors. Major examples cited in the literature include employees who are both reflective and well schooled in the art of problem solving; organizational forums (such as quality circles and efficient intranets) where employees can identify and communicate common problems and search for higher order solutions; an environment in which every employee feels responsible for the company’s competitiveness, and continuous benchmarking against the world’s best practices (Hamel and Prahalad, 1993).

A critical skill in the process of recontextualization is anticipating analogies, i.e. a hidden overlap or similarity between two or more discrete resource-base. This skill may help to anticipate when resources developed and used in one area or department have value elsewhere. The difficulty herewith seems to reside in recognizing when existing knowledge, in combination with other knowledge, has potential to be leveraged to a new context (Hamel, Doz, and Prahalad, 1989; Hamel, 1991; Nonaka and Takeuchi, 1995; Spender, 1996a,b). Once attained, such resources would enable the corporation to build and continuously renew a repository of ideas with potential value for utilization outside the context from which they emanate.

In addition to recontextualizing resources, a second tool for leveraging resources is blending resources. Whereas recontextualization involves recognizing the value of locally created knowledge resources for later use elsewhere, blending involves the development of such resources through synergistic complementing to make them amenable to usage in a different context. By blending resources in synergistic ways, management can transform resource bases while leveraging them. Spender (1996a,b) has established that while knowledge resources are typically thought to be the property of individuals, they are often held socially in the organization, for example in the form of joint expertise in engineering departments. In this view many organizational knowledge resources seem to be inherently linked to the context from which they originate. Since the processes of creating resources are often significantly interdependent on the context from which they emanate, locally designed resources do not readily turn into something with exchange value or use value elsewhere (Nonaka and Takeuchi, 1995; Spender, 1996a).
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Researchers have found that as with recontextualizing resources, a critical skill in blending resources can be analogous thinking. Analogies often highlight non-obvious similarities between discrete resource-bases, which may be indicative of potential use value elsewhere (Spender, 1996a; von Krogh and Roos, 1995). Through recontextualization and adaptation of existing solutions to fit the new problem, innovations may emerge (Nonaka and Takeuchi, 1995; Hagardon, 1998). To this day, for example, light bulbs are screwed into their sockets, because one of Edison’s lab assistants systematically developed the analogies between the problems of keeping the newly developed light bulbs in their sockets and the screw-top cap of a kerosene can in front of him (Hagardon, 1998).

5.2.3. Building the intelligent enterprise

While the previous imagination lever focused on leveraging internal resources, the present imagination lever focuses on leveraging external resources emanating from value chains adjacent to the firm’s own.

A firm’s value chain is embedded in a system of interlinked value chains, sometimes called a ‘value system’ (Porter, 1985: 34). This value system includes the value chains of suppliers of raw materials and components (e.g. Quinn, 1980, 1994), that tend to be interconnected by ‘knowledge links’ (Bardaracco, 1991), suggesting that the ‘intelligent enterprise’ focuses on developing ‘best in world capabilities’ in selected activities in-house (e.g. core-competencies), while sourcing other, less critical activities from partners (e.g. Hamel, 1991). This may be in one or more of several areas: distribution, brand name, selling infrastructure, technology, R&D resources, or manufacturing capability. Where internal development of these activities is judged to require excessive time, energy, money, and risk, partnerships in the form of joint ventures, or strategic alliances with other firms can be a natural alternative (e.g. Leibold and Slabbert, 1994). Building the intelligent enterprise through such alliances typically involves a long-term collaboration of two or more organizations to achieve strategic resource-exchange partnerships (Hamel, 1991).

Based on an extensive review of the creative imagination literature, two approaches to building the intelligent enterprise crystallize: (a) borrowing and (b) co-opting resources. The first of these two approaches, borrowing resources from other companies (Hamel, Doz, and Prahalad, 1989), involves not only getting access to another company’s knowledge pool and skills, but also internalizing these resources
(Prahalad and Hamel, 1990; Hamel, 1991), thereby expanding the corporate knowledge portfolio. Successful borrowing would be a function of the scope and depth of the firm’s level of prior related knowledge, which has been termed ‘absorptive capacity’ (Cohen and Levinthal, 1990). It has often been argued that companies may further enhance knowledge-borrowing processes by approaching foreign knowledge bases as ‘students, not teachers’ (Hamel and Prahalad, 1993).

Literature shows that a key challenge in borrowing resources revolves around a formidable balancing act between borrowing such resources and knowledge assets from partners, while protecting one’s own assets (Leibold, Gibbert, Kaes, 2001). The challenge is to share enough skills to create advantage vis-à-vis companies outside the alliance, while preventing a wholesale transfer of core competencies to a partner (Hamel, Doz, and Prahalad, 1989: 136). This challenge is exacerbated when borrowing resources involves collaborating with competitors. In such constellations, the danger of becoming ‘hollowed out’ by ‘predatory alliance’ partners (see e.g. Hamel, Doz, and Prahalad, 1989; Lei and Slocum, 1992) seems particularly evident, suggesting that appropriate steps be taken to ensure mutually beneficial borrowing. To illustrate: Phillips and Dupont collaborate to develop and manufacture compact discs, but neither side rivals the other’s market, suggesting that there is a clear upstream/downstream division of effort. Each partner believes that it can learn from the other and at the same time limit access to proprietary resources and skills. And yet, many of the skills that migrate between companies are not covered in the formal terms of the collaboration, often, what gets traded is determined by day-to-day interactions of engineers, marketers, and product developers (Hamel, Doz, and Prahalad, 1989: 136).

The literature emphasizes several areas in which steps can be taken to increase the probability that borrowing resources will turn out to be effective, durable, and satisfying to all parties despite the potential drawbacks illustrated above. Leibold and Slabbert have divided the areas of focus into five categories (Leibold and Slabbert, 1994: 2)

- Motivationally the alliance must be well conceived so that there is genuinely shared objective. Synergistically there must be an effective mash of assets and skills to mutual benefit.
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- **Structurally** there must be proper controls in place to afford fair protection of respective contributions and assets, to monitor progress and to ensure that the performance proceeds on tracks compatible with the original rationale behind the borrowing of the resources.
- **Developmentally** there must be a provision for the alliance to change over time, since environments to which the borrowing arrangement responds may not remain static, suggesting that insufficiently flexible alliances are doomed to fail.
- **Politically** there must be a good rapport on a human level in areas such as policy, vision, and management style.

While borrowing resources is designed to enlarge the in-house resource stock, the second approach to building the intelligent enterprise, *co-opting resources*, is designed to economize on the in-house resource stock. In the literature, co-opting resources is intended to complement the borrowing resources in that it offsets the latter’s focus on integrating and accumulating resources. Indeed, a central question in building the intelligent enterprise would be whether to increase the in-house resource pool, or whether to spin-off selected components in order to source them from the world’s best suppliers through collaborative arrangements (e.g. Quinn, 1994).

Resource and knowledge discrepancies have often been recognized in strategic management research as a motivator for such collaboration (Lei and Slocum, 1992; Bardaracco, 1991; Leibold and Slabbert, 1994). In these analyses, a distinction has often been made between the process of acquiring skills in the sense of merely gaining access to them (e.g. by taking out a license, or utilizing a subassembly supplied by a partner), and actually internalizing them to make them a permanent component of the corporate knowledge pool (e.g. Hamel, Doz and Prahalad, 1989; Hamel, 1991). Hamel referred to the first process as “quasi internalization” and to the latter as “de-facto internalization” (Hamel, 1991).

Building the intelligent enterprise by borrowing would be an approach for de facto internalization of resources from outside sources, thereby expanding the corporation’s own resource pool. In borrowing knowledge, the goal is to absorb a partner’s knowledge and make it one’s own. Co-option of resources, i.e. by sourcing required knowledge assets from adequate partners can provide an alternative means for the corporation to consolidate its knowledge pool, and would be akin to quasi internalization. In co-opting resources *the goal is to economize* on knowledge through
well-managed external partnerships (e.g. Hamel, 1991; Hamel and Prahalad, 1993). While both processes, borrowing and co-opting, are valuable approaches to leverage corporate knowledge portfolios by systematically tapping outside sources, a singular focus on either seems inappropriate. This suggests that companies need co-option as a balancing process to borrowing and vice versa.

Overall, the literature shows that a key challenge in consolidating resources is to decide which resources to maintain in-house and which ones to source from collaborative arrangements. To illustrate: many companies have had the experience that through management practices, such as lean management with its unavoidable discharges and outsourcing activities, valuable resources left the company (Nasser and Vivier, 1995). Companies, in an attempt to recapture the valuable resources thus dismissed, frequently need to buy back expertise from expensive consultants – ironically often the same ones that advocated lean management and outsourcing earlier. To amend this drawback in building the intelligent enterprise, the literature suggested that core competencies be distinguished from non-core competencies using the processes described in the imagination lever, i.e. ‘concentrating on core competencies,’ and that only non-core competencies be co-opted. This could aid the strategy maker in keeping abreast of ‘corporate anorexia’ (Nasser and Vivier, 1995), ‘corporate amnesia’ (Nasser and Vivier, 1995), or ‘phantom limb effects’ (von Krogh, Roos, and Hoerem, 1997) that seem to materialize when core competencies are co-opted. Hence the need for borrowing as a balancing process to co-opting, and vice versa in building the intelligent enterprise.

5.3. Step three: Realizing imaginative strategies

When the strategy has been conceived, the next task is to sustain its viability over time so that the company does not experience deteriorating performance. To monitor such performance holistically, the company needs to ascertain its tangible as well as intangible resources, hence the need for the introduction of multidimensionality in performance objectives as a first imagination lever in realizing strategies. A particularly critical performance objective is focusing on drafting unique selling propositions, which constitutes the second imagination lever discussed in this section. Eventually, the third imagination lever discusses how new competitive space can be created continuously so as to avoid the danger of being trapped in a served market or customer segments.
Crafting strategy imaginatively

5.3.1. Introducing multidimensional performance goals

A review of the literature reveals that the current business environment is characterized by a broad-based tendency towards knowledge-drivenness in business and society (see, e.g. Quinn, 1992; Toffler, 1990). This could result in a modification of performance objectives (see, e.g. Sveiby, 1997; Edvinsson and Malone, 1997; Hilb, 1998). In particular, the knowledge-driven tendency evidences the need to introduce multidimensional performance objectives, i.e. performance objectives that consider tangible as well as intangible assets. One particularly important area deserving explicit attention is the phenomenon of ‘intellectual capital’ (see, e.g. Stewart, 1998).

The acute need for multidimensional performance objectives becomes evident from the countless expressions used for the knowledge-driven tendency in the literature. Authors in academia and business practice alike describe an emerging ‘dangerous society, age, or era’ (Sveiby, 1997). Expressions utilized range from ‘Third Wave Economy’ (Toffler, 1980), ‘Information Age’ (Kaplan and Norton, 1996a,b), to ‘Knowledge Economy’ (Stewart, 1998). In this knowledge economy, which seems characterized by ‘future shock’ (Toffler, 1990), and ‘smart machines’ (Zuboff, 1988), the potential impact of knowledge on a wide variety of industries seems of such a magnitude that some observers refer to it as the ‘knowledge revolution’ (Stewart, 1998; Bardaracco, 1991).

Possibly as a result of the trends towards knowledge-intensive products and services, “wealth creation is now [becoming] a mental event” (Edvinsson and Malone, 1997). Indeed, the momentum behind the proliferation of interest in intellectual capital may be attributable to the fact that intellectual capital represents an increasingly large component of a company’s overall market value. In many instances intellectual capital even supersedes corporate book values. This difference between corporate market and book values is commonly referred to as the ‘value gap’ between market and book value (see e.g. von Krogh and Roos, 1996; Sveiby, 1997). It does not seem surprising that a consensus has arisen among many observers in academia regarding the significance of tending to intellectual capital. It is widely agreed that the value gap between market and book value is becoming too wide to be ignored by managers (Roos, Roos, Edvinsson, and Dragonetti, 1998; Stewart, 1998; Sullivan, 1998). This suggests an intense need to introduce performance goals that take cognizance of tangible, as well as intangible assets.
Interestingly, while the importance of intellectual capital seems widely acknowledged, no consolidation in scholarly thinking has as yet evolved concerning the anatomy of this phenomenon. Different definitions of intellectual capital (Edvinnson and Malone, 1997; Stewart, 1998; Roos and Roos, 1997) as well as approaches to the categorization thereof (Saint-Onge, 1996; Edvinnson, 1997; Sveiby, 1997; Sullivan, 1998) are offered in the current literature. Fortunately there are identifiable similarities between these approaches. Leibold, Kaes, and Gibbert (1999), in an extensive review of the literature, have proposed a tentative framework for synthesizing the various perspectives on intellectual capital. Drawing on an analysis of the building blocks of intellectual capital as forwarded by the most pertinent authors in the field, the tangible and intangible dimensions of intellectual capital were categorized into several building blocks. Their analysis has shown that while the authors reviewed are not terminologically congruent, conceptual commonalties seem to make the approaches amenable to synthesis. Table 5 summarizes these commonalties by placing the categorization terminology, as applied by the most pertinent authors, in perspective.

Table 5: Summary of four major approaches to categorize intellectual capital (Source: Leibold, Kaes, Gibbert, 1999:23).

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<td>Human Capital</td>
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<td>Structural Capital</td>
<td>Internal Structure</td>
<td>Structural Capital</td>
<td>Intellectual Assets (internal &amp; external)</td>
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<td>Customer Capital</td>
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Table 5 indicates that the four authors analyzed generally agree on a threefold classification of intellectual capital. At first glance however, it would appear that Sullivan only identifies two categories, namely human resources referring to the intangible dimension, and intellectual assets comprising the tangible dimension of intellectual capital. This obvious conjecture might be rejected by the notion that Sullivan’s intellectual asset dimension implicitly comprises an internal as well as an external aspect related to tangible assets. Sullivan’s definition of intellectual assets
claims that “any piece of knowledge which becomes defined, usually by writing it down or putting it into a computer qualifies as an intellectual asset.” Arguing that employees, on the one hand, e.g. enter customer or supplier data into the computer and, on the other hand, e.g. calculate process-oriented performance figures, validates the statement that Sullivan implicitly agrees on a subdivision of intangible assets into an external and internal dimension. There is therefore evidence for the notion that intellectual capital is best divided into three main building blocks (Leibold, Gibbert, Kaes, 1999: 25):

- human capital (i.e. the skills, capabilities and competencies of the corporate workforce),
- internal capital (i.e. internal governance mechanisms and organizational culture, “what is left when the employees go home”), and
- external capital (i.e. customer relationships and networks with relevant business partners and organizations in the nonprofit and public sectors).

Overall therefore, literature shows that introducing multidimensional performance objectives can best be accomplished by considering the three building blocks of intellectual capital.

5.3.2. Drafting unique selling propositions

Recent research has found that the drive for innovation leads to a remarkable difference between what companies are competing on, and what buyers actually value. For example, Hamel has found that often the drive for innovation pushes companies to ‘over-engineer’ products and services (e.g. Hamel, 2000). The VCR industry offers a telling illustration. Companies in this industry competed on the basis of increasingly sophisticated (but similar) technical features that eventually lead to technically complex, but difficult to operate VCRs. However, what customers apparently valued most was an easy-to-use VCR (Kim and Mauborgne, 2000).

This chasm between the basis of competition in an industry and what customers really value seems particularly evident in innovation-driven industries such as mobile telephony and personal computers (e.g. Kim and Mauborgne, 2000), but also in more established industries such as banking and hospitality industry (e.g. Hamel, 2000). The problem seems to be that many companies tend to focus on upgrading the basis of the competition in an industry so as to outperform competitors (e.g. adding
increasingly sophisticated technical features to VCRs), rather than concentrating on the buyer’s perspective (e.g. the desire for an easy-to-use tool). This difference in perspective is noteworthy, because it suggests that creating value for the customer is less a function of a technical product feature than a function of its utility to customers (e.g. Hamel, 2000; Kim and Mauborgne, 2000; Nonaka, Reinmoeller, and Seinoo, 1998).

Seen from the perspective of the customer, it often appears that the basis of competition in an industry is highly dysfunctional, and should be re-thought. The question therefore is: how can a unique selling proposition be drafted? A review of the literature suggests a considerable variety in perspectives. Some scholars focus on differentiation versus cost advantage (e.g. Porter, 1980). From this viewpoint it is advocated that customer value can be created by positioning products along a trade-off between differentiation and low cost (and hence, low price). These two options have been created in the light of the prevailing industry growth rate and the company’s share of that industry.

However, knowing how to position a company in a known market often confers little insight into what it is that customers actually value. As the VCR example demonstrates, it is often not expedient to pose the question “what shall we do to improve performance in the light of the industry?” but “what should we do to offer customers a leap in value?” Recognizing this difference in perspective, other scholars have advocated a focus on ‘creating buyer utility’ (e.g. Kim and Mauborgne, 2000). From this viewpoint creating value for the customer is seen as focusing on a customer’s experience with a given product. Creative imagination draws on this, second, stream of thought and attempts to aid in rethinking the basis of the competition in a given industry by focusing on the customer’s perspective.

Research has demonstrated that a customer’s experience can usually be broken down into two bases of appeal, the functional and the emotional, suggesting that competition in many industries converges on one of these two bases of the buyer experience (e.g. Kim and Mauborgne, 2000; Hamel, 2000). Some industries compete principally on functional performance (e.g. the VCR example). Other industries compete primarily on emotional appeal (e.g. the motorcycle industry). The problem is that industries driven by a functional appeal tend to be commoditized in their product
and serviced offerings, which lead to eroded profit margins due to higher competition (Kim and Mauborgne, 2000).

Literature also shows that the products and services within a given industry are intrinsically and unalterably functional or emotional. Companies can inadvertently drive their industries in one of these directions, thereby unconsciously educating their customers about what to expect. Indeed, it was recently discovered that a reinforcing cycle occurs between companies’ behaviors and customers’ demands (Kim and Mauborgne, 2000: 133). It was furthermore discovered that bases of appeal differ within industries as much as they differ across industries (Hamel, 2000: 66-69). To illustrate: in the motorcycle industry, BMW is usually associated with a functional appeal, whereas Harley Davidson is typically perceived in a more emotional fashion (Hamel, 2000). To quote Hamel,

“it’s one thing for people to buy your products. It’s quite another for them to tattoo your name on their bodies. BMW makes awesome motorcycles, but when have you last seen a biceps that read ‘Bayerische Motorenwerke’?” (Hamel, 2000: 68).

As Hamel’s quote implies, in drafting unique selling propositions, it is often expedient to shift the basis of appeal from functional/rational to emotional. This is generally accompanied by focusing on offering a complex solution, rather than simply selling the product, and thereby increasing value for the customer. A case in point is Starbucks coffee. In the late 1980s, Procter & Gamble, General Foods, and Nestlé held 90 percent of the U.S. coffee market. When Starbucks entered the industry, all three companies viewed coffee as a commodity: generic beans bought from roughly equivalent producers, roasted using similar techniques and packed using standard containers. As in most commodity-driven industries, the basis of competition was on cost cutting and fighting for market share to spread costs. While the big three sold coffee as a commodity, Starbucks added emotional appeal. This was done through focusing on a complex solution, i.e. a retailing concept including the coffee bar, offering relaxation and conversation, and drinks made with frothy and flavored milks, creams, syrups, and ices. In what was once an industry characterized by fierce price competition, Starbucks was able to charge premium prices and became an important chain in the US within less than ten years (Wall Street Journal, July 2001).
5.3.3. Creating new market space

Creating new market space is a term that was recently introduced by Kim and Mauborgne (1999b). A review of the literature reveals that creating new ‘market’ space is related to the concept of creating new ‘competitive’ space introduced earlier by Hamel and Prahalad (e.g. Hamel and Prahalad, 1994b). Careful analysis further reveals that these authors’ definition of new competitive space, while terminologically different, seems very similar conceptually to Kim and Mauborgne’s creating new market space. The term new ‘market’ space is used in this dissertation, because it terminologically emphasizes that creating new market space focuses on avoiding head-to-head competition. Thus, creating new market space, as it is viewed in this dissertation, refers to the generation of value for the company not by matching or beating rivals in existing markets, as in the competitive strategy orientation characteristic of the descriptive imagination literature, but by looking for entirely new business opportunities (a contention in line with Kim and Mauborgne, 1999b: 83). In creating new market space, the goal is not to extend current expertise or to better satisfying the customer than the competition would. Hence the attribute ‘competitive’ was deemed to inappropriately reflect the rationale of the concept, and ‘creating new market space’ was adopted.

While terminology sometimes differs, many authors provide convincing empirical evidence for the conclusion that creating new market space is likely to be a key value generator for companies. To illustrate the significance of creating new market space: based on an extensive analysis of Fortune 500 companies between 1975 and 1995, Kim and Mauborgne recently discovered that 60 percent of these companies were replaced. Irrespective of their industry, what was common to the new entrants was that they either created new markets or recreated existing ones. In contrast, the companies that were replaced were all competing for a bigger share of the existing market (Kim and Mauborgne, 2000). A case in point is Callaway Golf, a U.S. golf club manufacturer. This company launched the so-called ‘Big Bertha’ golf club series, which proved to be extremely successful in the very competitive golf club market. However, competition in the market was centered around making sophisticated enhancements that were designed to hit the ball farther, and with more accuracy. Callaway realized that the act of hitting the ball with a little golf club head was too daunting a task for many sportsmen. Recognizing a potentially lucrative new market space, Callaway then made a golf club with a larger head that made golf less difficult (Kim and Mauborgne, 1999b: 43).
Crafting strategy imaginatively

If creating new market space is a key value driver, the next question is: *how can creation of new market space be achieved?* As the Callaway example illustrates, creating new market space requires a pattern of strategic imagination that is different from describing competitive dynamics within the accepted boundaries that define how players in a given industry compete. According to recent research results, understanding how to position a company in a known market against existing competitors provides little insight into how to create new market space, (e.g. Kim and Mauborgne, 1999b, Hamel, 2000). Literature shows that the key question therefore becomes how to aid the strategist in *creatively looking at established dynamics in a new way*. A review of the literature suggests a variety of approaches that can be taken to stimulate such creative imagination. The following two pointers were gained through an extensive review of other work, and provide, in a condensed format, an overview of the approaches that were most widely cited in the literature.

First and foremost, *the inevitableness of industry conditions can be rethought.* Most companies seem to take industry conditions as a given. Such thinking, however, can severely restrict the range of strategic actions. It must be appreciated that companies not only compete with their rivals in their own industry, but also with those from substitute industries that produce similar products or services. Indeed, in making purchase decisions, customers tend to weigh substitutes, often unconsciously. Consequently firms wanting to create new competitive space may look across substitute industries. As a result, a far wider range of strategic options can be explored. This can increase the creative scope of companies wishing to create new competitive space. It can further lead to the consideration of ideas that rivals in the same industry cannot consider (e.g. Kim and Mauborgne, 1999a,b; Hamel, 1996).

The key question that companies aspiring to create new market space seem to ask themselves, is therefore not what it takes to gain and sustain a competitive advantage in a given industry, but what the key discriminating factors are that lead buyers to trade across substitute industries. Based on these insights, the distinctive strengths of both industries can be combined and exploited (e.g. Hamel, 2000; Hamel and Prahalad, 1994a). Southwest Airlines, for example, effectively created new market space, the short-haul air transport, by realizing that for short-haul flights transportation by car was a substitute for flying. Southwest Airlines combined the key discriminating factors leading to the purchase decision, namely the speed of flying and lower cost coupled with flexibility (Kim and Mauborgne, 1999b: 84).
Theoretical Framework

Second, **looking across complementary products and services**, in addition to looking across substitute products and services is an important pointer (e.g. Kim and Mauborgne, 1999b; Prahalad and Hamel, 1994). It does not seem surprising that most companies focus on maximizing the value of products and services in their own industry. However, new market space can be created by looking across complementary products and services from other industries, and exploring the interface between the two industries. The key in exploring this interface seems to be to focus on the total solution that buyers seek when they choose a product. The question here becomes how to shed more light on the individual components comprising the total solution. To illustrate with another example from the airline industry: ground transportation to and from the airport has become an integral part of the solution package offered by airlines such as Lufthansa. Kim and Mauborgne suggested that an effective, if simple, way to focus on the total solution that customers seek, is to imagine what happens right before, during, and after a product or service is used. In this manner new competitive space can be created by widening the scope of the products and services offered (Kim and Mauborge, 1999b: 89).

### 6. A three-step approach for challenging imagination

While the previous two sections focused on descriptive and creative imagination, this section focuses on challenging imagination. The framework below (Figure 7) is an elaboration of the blueprint for the strategy-making matrix. It clusters the activities associated with the third thrust of strategy making, namely challenging imagination, using the three generic steps in the strategy-making process: envisaging, conceiving, and realizing imaginative strategies. The activities associated with challenging imagination (the nine strategic imagination levers) are derived from the critical analysis of existing strategy content and process research conducted earlier in this chapter.
As was customary with descriptive and creative imagination, the exercise of clustering the nine imagination levers associated with challenging imagination under the three generic steps of the strategy-making process attempts to eliminate the two key weaknesses prevalent in earlier work on strategy. First, the critical analysis conducted at the beginning of this chapter has shown that earlier research strategy content mostly focused on ‘what’ strategic positions of the firm lead to optimal performance under varying environmental circumstances, without simultaneously considering the three generic steps of the strategy-making process, i.e. ‘how’ such positions can be reached in the first place. Second, the strategy-making matrix suggests that challenging imagination represents only one of three basic thrusts in strategy making. The strategy-making matrix therefore complements challenging imagination with two further thrusts, descriptive imagination, and creative imagination.

Thus, for expository purposes,

- The present section elaborates on the nine individual levers for stimulating challenging imagination in Figure 7. In line with Sun Tzu’s axiom, the imagination levers in each step focus on the firm itself, the firm’s environment
and the firm’s partners/competitors in order to provide a *mutually exclusive and collectively exhaustive* outlook on strategy making.

- The two previous sections focused on descriptive and creative imagination, respectively, so as to achieve an integrated outlook on strategic imagination in line with the proposed *Spannungsfeld* approach that underlies the strategy-making matrix.

6.1. Step one: Envisaging imaginative strategies

In envisaging imaginative strategies challengingly, companies seek to be coherent, rather than visionary, since long-term visions are frequently of limited use in unpredictable environments. The second imagination lever is to defy old paradigms in order to ensure that the company challenges its established wisdom of doing things. This requires fostering a culture of constructive dissent in crafting strategy imaginatively. As in the previous sections on descriptive and creative imagination, the structure of the imagination levers is in line with Sun Tzu’s framework, which focuses on the firm itself, the firm’s environment and the firm’s partners/competitors.

6.1.1. Ensuring coherence

According to a recent article by Lissack and Roos, coherence is psychologically the concept of ‘holding together’ and of self-recognition of the boundary of self, and acts to tie the levels of organizations together, much like the role of the unified electromagnetic weak-strong nuclear force in physics (Lissack and Roos, 2001: 16).

Ensuring coherence is often contrasted with establishing a vision. According to the strategy process and strategy content literature, many executives feel the need to articulate an ideal end-state for their organizations – often in the guise of a corporate vision (e.g. Porter, 1980; Mintzberg and Lampel, 1999). Authors explain that striking the balance between novelty and believability of such an ideal end-state is often exceedingly difficult, and empirical evidence shows that managers are neither satisfied with the vision, nor the visioning process (Lissack and Roos, 2001: 1; see also Oliver and Roos, 2000; Hamel, 2000; Eisenhardt and Sull, 2001). This argument serves the authors to conclude that the very idea of having a corporate vision is of limited use in today’s complex business landscapes. Lissack and Roos (2001: 1) emphasize that once
the world is seen as unstable and unpredictable, what matters is being coherent rather than being visionary.

Research into ensuring coherence in current complex business environments, inspired by complexity theory, is emerging as an intensely topical concern among scholars and practitioners of strategy (see, e.g. Lissack and Roos, 1999, Cilliers, 1998; Kaufmann, 1995; Beinhocker, 1997). These authors point out why executives need to replace visioning efforts with a focus on how to become and remain coherent throughout the organization as well as offering a few guiding principles on how to do this in practice. While the literature review found that terminological and conceptual consensus has yet to be established, it is still possible to define ensuring coherence as acting in a manner that reinforces what an organization stands for, given the current environment (Lissack and Roos, 2001: 1-4).

Why then is the traditional concept of vision seen as unduly limiting in the challenging imagination literature? Recent research shows that the problem with visioning processes is that they are based on what we know about yesterday, while the strategy maker is not only trying to envision tomorrow, but some medium term future as well. Authors agree that by naming it ‘vision’ (an outcome), there can be a danger of reifying the past and in doing so preclude changes in it (e.g. Lissack and Roos, 2001; Beinhocker, 1997; Eisenhardt and Sull, 2001). Lissack and Roos explain,

“Having locked in an outcome (i.e. the predictable future), it is all too tempting to work backwards from it not focusing on the potential interactions that could happen along the way. The very process of working backwards, of needing to have a defined game plan for achieving set goals, will restrict your ‘possibility space.’ and may interfere with your ability to adapt to changes going on around you and seize new opportunities when they arise” (Lissack and Roos, 2001: 4).

The next question regards the arenas of ensuring coherence, i.e. it asks where coherence can be ensured. A review of the literature suggests that tending simultaneously to two arenas of corporate involvement, namely the external and the internal, can ensure coherence (e.g. Hamel and Prahalad, 1993; Eisenhardt and Brown, 1998).
Theoretical Framework

First, the corporation should ensure that coherence prevails *internally* among disparate knowledge bases. A certain synthesis or synergy of the knowledge bases has to be ensured despite the ambition to leverage knowledge from various sources inside and outside the company in a given industry. If coherence is lost and cannot be re-established by enhancing the co-ordination of internal practice, the company may need to divest certain knowledge bases until it achieves coherence again (Brown and Duguid, 1998). Indeed, the competitiveness of companies appears in part to be a function of their success at achieving collective coherence among their various internal communities of practice (Teece, Rumelt, Dosi, and Winter, 1994).

Second, a company needs to ensure coherence in the *external* arena. Germane in the external arena seems to be the extent to which a firm manages its long-held orthodoxies, i.e. the extent to which it ensures coherence of internal practice with competitive environments (e.g. Leonard-Barton, 1995). This appears to be of critical importance in view of the tendency of such orthodoxies to depreciate over time relative to the competitive environment. It is therefore critical to guard the corporation against incremental reapplication of dated concepts. Lissack and Roos (2001: 9) have identified three key assumptions leading to dated concepts:

a) The world is stable enough for changes that may occur to be foreseeable
b) Prediction is possible.
c) Boundaries are clearly defined.

Lissack and Roos explain that the focus in ensuring coherence in the external arena, instead of relying on the above, dated, assumptions,

“is on who am I, what do I see as adjacent ‘possibles’ in the current environment (for we can only move to the next step one at a time), are those possibilities consistent with my sense of identity and boundary (are they coherence preserving)? And for ‘I’ in the previous sentences one can substitute the team, the group, the unit, and the company. Action across all those scales is what the company is all about. And guiding coherent action is the key task of management” (Lissack and Roos, 1999: 23).

The above quote leads to the next question: *how can coherence be ensured?* According to Hamel and Prahalad (1993), ensuring coherence in the internal and external arena
Crafting strategy imaginatively

can be achieved through, first, converging and, second, focusing organizational competence and knowledge assets. Ensuring coherence requires what the authors refer to as industry foresight, i.e. a strategic focal point on which the efforts of individual employees, organizational functions and businesses can converge over time (see also Hamel and Prahalad, 1994a,b). *Convergence* requires an intent that is sufficiently precise over time to guide corporate decision making, while at the same time leaving enough space for ideas to evolve freely. With convergence preventing the diversion of knowledge over time, *focus* is designed to prevent the dilution of knowledge at any given time (Hamel and Prahalad, 1993: 80). As Hamel and Prahalad (1994b) have emphasized, industry foresight requires an understanding of the trends and discontinuities that can be used to transform industry boundaries and create new business opportunities quicker than competitors. Industry foresight can give a company the potential to stake out a sustainable leadership position and control the evolution of its industry. This foresight seems to require a continual breaking of established managerial frames, and deep-seated assumptions about the core business of a company need to be challenged continuously (Hamel and Prahalad 1994a,b; Nasser and Viviver, 1995).

Other researchers have emphasized that while it may be easy to grasp the above suggestions intellectually, acting on their implications in a knowledge leverage context could be much more difficult, since ensuring coherence may require acting against the very knowledge integral to corporate identity. In the current business environment, it no longer suffices to concentrate on corporate core competencies, because it may be these very core competencies, often central to a company’s identity, that the knowledge era turns obsolete (e.g. Leonard-Barton, 1992, 1995).

As Evans and Wurster have emphasized, ‘new economics of information’ are likely to transform the structures of businesses or industries, thereby shifting the traditional sources of competitive advantage. Information businesses, where the cost of physical distribution is high, are likely to be affected soonest and most severely. The authors believe that incumbents could easily become victims of their physical infrastructure and their long-held managerial frames (Evans and Wurster, 1997). According to Evans and Wurster, the case of the Encyclopedia Britannica provides a useful illustration. The publisher experienced a near demise, because it failed to understand that its customers were “buying Britannica less for its intellectual content, but out of a desire to ‘do the right thing’ for their children. Today when parents want to do the right thing,
they buy their children a computer” (Evans and Wurster, 1997: 71). As a result of this misplaced perception, the publisher seemed to have interpreted CD-ROMs, which deliver the same intellectual content much cheaper, as nothing more than an electronic version of inferior products. The way the Britannica editors appear to have seen it, the CD-ROM version was not an encyclopaedia at all - it was a toy. Britannica’s customers, however, perceived the CD-ROM version of the printed product as much more than a toy (Evans and Wurster, 1997: 71-74).

Overall, recent research evidence suggests that companies should, by ensuring coherence, continuously seek to understand what its customers are actually buying and define their core business accordingly. The current business environment drastically transforms the process by which core competencies were once defined (the realm of creative imagination), or the processes by which industry positions were defended (the realm of descriptive imagination) and imposes new variables to be considered. Ensuring coherence is therefore intended to help the corporation rigorously align its definition of core competencies with the new competitive dynamics of the knowledge age. As shall be discussed in the two sections that follow, this effort requires the defying of old paradigms, and fostering a culture of constructive dissent.

6.1.2. Defying old paradigms

Defying old paradigms represents a central tenet in challenging imagination that seeks to disconfirm, defame, and dispute the established wisdom. Defying old paradigms can be defined straightforwardly as “questioning answers, rather than answering questions” (see Hamel, 2000: 145). It is about re-thinking ‘the way we do things around here.’ Hamel emphasizes that heretics, not prophets, are required for defying old paradigms in order to sustain company growth in the long term. According to this author, the real issue in crafting strategy is not about the present versus the future, but the orthodox versus the heterodox, the reason being that there tends to be an enormous danger in viewing “what is changing through the looking-glass of what already is” (Hamel, 2000: 60).

Literature amply emphasizes the importance of defying old paradigms. For example, recent strategy content and process literature illustrates the demise of companies that, when faced with crucial signs of changes in the environment of the firm, tended to interpret these changes consistent with the existing organizational paradigm (e.g. Johnson, 1994, for a comprehensive review). Similarly, the dangers of path-dependent
behavior that turns core competencies into core rigidities (Leonard-Barton, 1992, 1995) are well documented and validate the importance of defying old paradigms. While there are many areas where paradigms can be defied, literature shows that defiance of industry paradigms seems to be the most salient (e.g. Nasser and Vivier, 1995). Research furthermore points out that the greatest impediment to revenue growth is getting locked into the industry paradigm. Literature shows that this defiance of old industry paradigms is quite different from defining industry boundaries (as in descriptive imagination), and it seems also quite different from re-defining industry boundaries (as in creative imagination). To illustrate with a provocative quote by Hamel:

“It’s not easy to grow the top line with a strategy that’s ‘more of the same.’ For some years, McDonald’s growth in the US has been sputtering. The company introduced a new cooking system that... promised Hamburgers even quicker from the grill. Will this solve McDonald’s growth problem? It might, but maybe McDonald’s should ask itself if Americans are already eating as many hamburgers as they’re ever going to. Maybe Americans have reached their cholesterol limit” (Hamel, 2000: 12).

In surveys across as many as 20 different industries, Kim and Mauborgne (1999a,b), corroborating Hamel’s findings, have found that surprisingly few companies were able to grow revenues above industry average. In the case of McDonald’s, as well as in the case of many other industries, the authors found a strong association between unsatisfactory revenue growth rates and the inability to break out of the industry paradigm. As Hamel puts it, for some companies, “industry is destiny” (Hamel, 2000: 12).

The most important area of application of defying paradigms therefore seems to be the dogma prevalent in the industry or industries in which a company competes. The idea here is to break out of industry dogmas, and to think across industry boundaries (rather than defining or re-defining them) in order to imagine opportunities for achieving revenue growth at the juncture of two or more industries (Hamel and Prahalad, 1996: 240). A variety of authors have recently advocated the importance of looking across industry boundaries for the purpose of identifying growth opportunities. Lissack and Roos (2001) have shown the perils of being preoccupied with mission statements that are grounded in the prevailing industry definition.
Eisenhardt and Brown (1998) have pointed out the benefits of ‘competing at the edge of chaos’ between two or more industries. The most recent contribution seems to be Eisenhardt and Sull’s advocacy of opportunity-driven strategizing at the interface between two or more industries using a “cockroach approach” (Eisenhardt and Sull, 2001: 108).

The question arising from these contributions is: how to defy paradigms? For the purpose of the present dissertation, the above stream of thought, while still evolving, can be crystallized by a number of pointers that help managers understand how paradigms can be defied. Synthesis of the above contributions suggests two areas of intervention for managers: first by challenging industry orthodoxies, and second by taking the perspective of the customer, and/or the competitor.

First, companies need to look for disconfirming evidence by asking the ten things a customer would never say about an industry. For example, Hamel found that few customers would say “the airline treats customers with dignity and respect” (Hamel, 2000: 64). According to Hamel, defying old paradigms from the customer perspective can reveal deep “customer-dissing orthodoxies,” i.e. ways in which the company inadvertently irritates or annoys customers (Hamel, 2000: 138). Key in defying old paradigms from customers’ perspective is to play a game of perpetually asking ‘why,’ and ‘what if,’ and even ‘to celebrate the stupid,’ i.e. those that lack industry knowledge (Hamel, 2000:138). Indeed, lack of industry knowledge can be helpful in re-conceiving orthodoxies in an industry. The goal is to look for aspects that do not fit the established wisdom. As the airline example above suggests, defying old paradigms by asking the ten things a customer would never say about an industry is imbued with irony, if not sarcasm. These two forms of humor can form a critical role in the defiance of old paradigms (Eppler and Kuepers, 2000), mainly because humor tends to lower resistance to changing from the old paradigm to a new one.

Second, strategy makers can ask, “what are the ten things that all major competitors in the industry have in common?” (Hamel, 2000: 64). Research shows that the healthcare industry, for example, thinks of the sick as patients, not consumers. And yet, particularly in the healthcare industry, there seems to be enormous potential for rethinking the beneficiary of healthcare services. Such benefits include learning and relationship building in order to promote wellness, rather than cure illness (e.g. Prahalad and Ramaswamy, 2000: 87). As with the first area of intervention that
attempts to defy old paradigms by looking at them from the customer perspective, looking at old paradigms from the competitor perspective is also prone to irony and cynicism, albeit to a lesser degree. The idea here is to deconstruct the individual components of a belief system in an industry and to invert these components (Hamel, 2000; Eisenhardt and Sull, 2001).

Overall, the practice of inverting the belief system in an industry can be particularly effective if strategies in an industry tend to converge. To illustrate: a recent survey (Kim and Mauborgne, 1999a) found that the strategies of Fortune 500 companies in many industries tended to converge, leading to perfect competition. The result of perfect competition is well documented in neoclassical economics: to the extent that companies follow identical strategies and are endowed with similar resources, profit equals cost. The implication is that ‘best practice transfer,’ trying to benchmark best in class competitors and attempting to do better are inclined to turn companies into industry laggards. In contrast, defying old paradigms by looking at the belief system in an industry from competitors’ perspective can help the strategy maker maintain the competitive differentiation necessary for sustained revenue growth (Hamel, 2000; Kim and Mauborgne, 1999a,b; Nasser and Vivier, 1995).

6.1.3. Fostering a culture of constructive dissent

Fostering a culture of constructive dissent is about purposefully challenging one another’s thinking in the strategy-making process. It can be defined as the endeavor to develop a more complete understanding of the choices at hand, to create a richer range of options, and ultimately make the kinds of effective decisions necessary in today’s competitive environments. As Eisenhardt et al. have succinctly put it:

“The absence of conflict is not harmony, it’s apathy” (Eisenhardt, Kahawajy, and Bourgeois, 1997: 77).

Several authors stressed the importance of fostering a culture of constructive dissent. Kim and Mauborgne (1997b) have advocated practicing ‘fair process’ in strategy making, Eisenhardt (1999) has alerted her readers to unleashing collective intuition, accelerating constructive conflict, and maintaining decision pacing. Hamel empirically confirmed the importance of fostering a culture of constructive dissent in detailed analyses across 20 industries (Hamel, 2000). This author emphasized the need to ‘develop corporate activists’ that rebel against ‘corporate apparatchiks’ (2000:
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Along the same lines, Leavitt and Limpan-Blumen (1995) have investigated ‘hot groups’ as the locus where such constructive dissent is practiced, and have also linked these groups to the performance implications of constructive dissent. The authors’ findings demonstrate that constructive dissent is associated with desirable performance implications. In a well-known article, Mintzberg (1994) investigates the ‘fall and rise of strategic planning,’ concluding that strategy makers should act as catalysts who support strategy making by aiding and encouraging managers to think strategically (1995: 108).

Unfortunately, fostering a culture of constructive dissent is fraught with pitfalls. Empirical analyses find that top managers are often obstructed by the difficulties of managing conflict, associated with fostering a culture of constructive dissent. Research shows that managers do seem to know that conflict about issues is natural and even necessary, suggesting that reasonable people are likely to have disagreements about the best path for their company’s future (Eisenhardt et al., 1997: 77). However, a healthy conflict can quickly turn unproductive. Literature has found that the key reason for this inadequacy is that personalities frequently become intertwined with issues. To illustrate: insights from psychology suggest that a comment meant as constructive criticism can be easily interpreted as a personal attack (e.g. Eisenhardt et al., 1997: 78; Eisenhardt, 1999: 65). According to recent empirical research, strategy makers seem particularly prone to this inadequacy, since executives often pride themselves on being rational decision makers, finding it difficult to acknowledge, let alone manage, this irrational and emotional dimension of their behavior (e.g. Eisenhardt et. al, 1997: 78).

The challenge of fostering a culture of constructive dissent – encouraging strategy makers to argue without destroying their ability to work as a team – is compounded by the preconditions to ignite dissent. The reviewed strategy literature gives sparse recommendations regarding such preconditions, which include diversity, frame breaking tactics, and creating multiple alternatives (e.g. Eisenhardt et al. 1997: 69-70).

- The first, and foremost, precondition for igniting dissent is diversity. Such diversity can focus age, experience, cultural background, and professional background (Hilb, 2000).
- The second precondition that was found in the literature was frame-breaking tactics that create alternatives to obvious points of view. The traditional way to
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generate new alternatives to obvious points of view is the scenario-planning technique, which serves to systematically consider strategic decisions in the light of several possible future states (Eisenhardt et al., 1997: 69)

- **Third**, giving multiple alternatives can be a precondition for dissent. According to Eisenhardt et al. (1997: 69), multiple alternatives are frequently the most prevalent precondition for dissent. Key in giving multiple alternatives is to design alternatives as quickly as possible so that the team can simultaneously work with an array of possibilities. Indeed, the authors have found that strategy makers considered it entirely appropriate to advocate options that they may not prefer, simply to encourage debate (Eisenhardt et al., 1997: 70).

While these preconditions are important stimuli for constructive dissent, they are frequently also prone to dysfunctional dispute and heated discussions. The key question therefore becomes how fostering a culture of constructive dissent can be kept from deteriorating into *dysfunctional personal conflict*, how to encourage strategy makers to argue without destroying their ability to work as a team. While the psychology and social psychology literatures seem replete with approaches to manage conflict, the literature on strategy interestingly remains relatively silent as to measures that can be taken to foster a culture of constructive dissent. An exception is Eisenhardt’s work in this realm (Eisenhardt et al., 1997; Eisenhardt, 1999; Eisenhardt and Brown, 1998), which was also widely referenced in the literature. For the purpose of this dissertation, her suggestions for fostering a culture of constructive dissent can be summarized in two main pointers.

*First*, strategy makers should focus on issues, not personalities. Empirical evidence shows that management teams troubled by interpersonal conflict rely more on ‘hunches and guesses’ than on current data. Eisenhardt explains that when management teams consider facts, they are more likely to examine a past measure, such as profitability, which is both historical and highly refined. These teams favor a culture of debate that is based on extrapolation and intuitive attempts to predict the future, neither of which was found to yield current or factual results. In Eisenhardt’s research, the most successful companies evidenced a direct link between reliance on current, as opposed to historical, facts, and low levels of interpersonal conflict. The authors cite from their interview data of high conflict teams, where interest in current numbers was ‘minimal,’ and goals were described as ‘subjective,’ or driven by ‘self-
aggrandizement.’ By contrast, low conflict teams featured members that interviewees described as ‘the pragmatic numbers guy’ (Eisenhardt et al. 1997: 79).

Second, decisions need to be framed as collaborations aimed at the best possible solution for the company. According to Eisenhardt, the key here is to rally around goals, while avoiding politics. However, research has found that many managers believe that politics is a natural part of strategic choice (e.g. Leonard-Barton, 1995; Eisenhardt, 1999). Managers frequently see crafting strategy as involving high stakes that compel them to lobby one another, manipulate information, and form coalitions. More effective strategy makers, however, seem to focus on diffusing politics by creating common goals. These goals were found not to imply homogenous thinking, but rather to suggest that managers have a shared vision of where they want to be. The most successful way found to defuse politics and institute a shared vision was through a balanced power structure in which each key decision maker has a clear area of responsibility, but in which the leader is the most powerful decision maker. Paradoxically the clear delineation of responsibility was found to make it easier for managers to help one another, since each manager operates from a secure power base. According to one of Eisenhardt’s interviewees, ‘we just don’t worry much about an internal pecking order’ (Eisenhardt, 1999: 71).

6.2. Step two: Conceiving imaginative strategies

The previous section discussed three imagination levers for a challenging approach to envisaging strategies. This section discusses how challenging imagination can contribute to actually conceive strategies. The first lever for this purpose is to think beyond the existing value chain, and to deconstruct it in its constituent components. An important partner in the deconstructed value chain becomes the customer, whose competence can frequently be co-opted, as will be discussed in the second imagination lever in the present section. This co-option of customer competence can even lead to a blurring of boundaries and roles between the company and its customers. In terms of the third imagination lever of this section, it is therefore often expedient to adopt a mindset of co-evolving with the environment, analogous to bio-systems.
6.2.1. **Deconstructing value chains**

According to the BCG consultants Evans and Wurster (1997, 2000), the extant ‘information revolution’ materializes in a deconstruction of value chains, i.e. a separation of business- and even entire industry value chains into *individual components*, each of which could become a business in its own right. The reason for the deconstruction of value chains is mainly seen in the de-coupling of the flow of information goods from physical goods in virtually any industry (Evans and Wurster, 2000: 13). To illustrate, physical goods and information goods are based on fundamentally different economic logics. Evans and Wurster explain these different economic logics as follows:

“When a thing is sold, the seller ceases to own it; when an idea, a tune, or a blueprint is sold, the seller still possesses it and could possibly sell it again. Information can be replicated at almost zero cost without limit; things can be replicated only through the expense of manufacture” (Evans and Wurster, 2000: 15).

According to the authors, the *different underlying economics of physical and information goods* call for different management approaches. The economics of physical goods are subject to the law of decreasing returns. The law of decreasing returns suggests that once sold, a physical product incurs the expense of manufacture, i.e. incurs marginal cost. In contrast, information goods are subject to the law of increasing returns, particularly in information- and R&D-intensive industries such as software and pharmaceutics (e.g. Hebler and van Doren, 1997; Arthur, 1996). According to recent research, the problem is that in most value chains physical goods and information goods are still *inextricably linked*, “each is prevented from following its ‘pure’ logic by the bond tying it to the other” (Evans and Wurster, 2000: 16). This linkage compromises the potential of each good to follow its pure logic, and hence compromises business performance:

“The economics of information and the economics of things have been tied together like participants in a three-legged race. Every business is consequently a *compromise between the economics of information and the economics of things*. Separating breaks their mutual compromise and releases enormous economic value” (Evans and Wurster, 2000: 17; emphasis added).
The authors explain that the link between information and its physical carrier can be broken. This *unbundling of information from its physical carrier* entails a number of fundamental implications for crafting strategy imaginatively. In particular, the new economics of information would deconstruct existing value chains. This deconstruction results from the “separation of the economics of information from the economics of things” (Evans and Wurster, 1997: 77). The authors argue that given the fundamental differences in the economics underlying physical goods and information goods, there is no longer a need for the individual components of a business structure to be integrated. As a result, value chains should be deconstructed and their individual constituents should be recombined into new businesses, in order to take optimum advantage of the separate economics of physical and information goods (Evans and Wurster, 2000: 19).

The next question is, *how can the deconstruction of value chains be accomplished?* According to prominent scholars, the key question here is to ascertain where the interface between physical goods and information goods resides, and to break this connection, i.e. to deconstruct a given industry or business value chain. The authors demonstrate that at least two approaches to deconstruct value chains at the interface between information goods and physical goods are useful: competing on reach and/or richness (Evans and Wurster, 1997, 1999).

*Competing on reach* centers around access and connection. It refers to the number of customers with whom a business can connect and the number of products it can offer to those customers. Reach represents the most critical difference between physical and Internet businesses. In fact, reach is a key value propositions for companies such as Amazon, which epitomize the far greater reach afforded to Internet businesses, once the information good (e.g. the book catalog) is separated from the physical good (e.g. the inventory). Another illustrative example that is frequently cited in the literature is EveryCD, a company specializing in selling music compact discs, which was so confident of its ability to compete on reach that it offered prizes to customers who could prove that their catalog was incomplete (Evans and Wurster, 1999: 88-89).

*Competing on richness* centers around the depth and detail a company can offer its customers as well as the depth and detail it can collect about its customers. When competing on richness, the objective is twofold: to collect rich customer information and to collect rich product information. The first objective, collecting rich customer
information enables companies in the retail and hotel industries to offer customized products and services (e.g. Hebeler and van Doeren, 1997). Approaches frequently used to this end include data mining and data warehousing (e.g. Evans and Wurster, 1999: 91). The second objective is competing on rich product information. According to Evans and Wurster, it is generally difficult for manufacturers to use rich customer information, since retailers tend to be closer to customers, and hence better posited to compete on rich customer information. However, manufacturers can develop distinct advantages in the realm of product information. To illustrate: in the music industry, most of the major companies such as Sony, Universal, and Warner are developing information-rich performer biographies, recording history, chat rooms and discographies (Evans and Wurster, 1999: 92).

6.2.2. Co-opting customer competence

As the boundaries of the firm’s value chain become deconstructed and more imprecise, so do the boundaries of managerial control (Hamel and Prahalad, 1996: 239). This poses the question of how managers can ‘control’ resources when those resources are outside their firm or their business units? One such, important, resource is the customer.

Prahalad and Ramaswamy illustrate the importance of the customer as an organizational resource by drawing an analogy. According to them, doing business used to be a lot like traditional theater: On stage, the actors had clearly defined roles, and the customers paid for their tickets, sat back and watched the show passively (Prahalad and Ramaswamy, 2000: 79). However, the roles between customers and the company are often difficult to define formally. Major discontinuities, such as deregulation, globalization, and the rapid diffusion of the Internet, are blurring the roles that companies and their consumers play (e.g. Sampler, 2001: 138).

Researchers are in consensus that mainly due to the Internet, consumers are now ‘empowered’ to engage in an active dialogue with the company (Sampler, 2001). As one observer insightfully commented: “armed with perfect information at zero search costs, consumers are going to weed out mediocrity, hype, and inefficiency with a vengeance” (Sampler, 2001: 139). Co-opting customer competence suggests mobilizing customer communities to stimulate knowledge creation and innovation. It further suggests widening the concept of constructing value propositions to include customers as integral players in such value construction processes. Individual
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customers can both address and learn about companies on their own, or through other customers’ collective knowledge (Prahalad and Ramaswamy, 2000).

The critical observation is that such empowered customers can now initiate dialogue with the company – they have moved, as Prahalad puts it, from the audience on to the stage. Customer competence can be defined as corporate customers’ knowledge relevant to the firm’s operations. For example, Amazon’s publishing of customers’ book reviews online is one way of collecting and disseminating customer competence. By using online book reviews, for example, Amazon is able to profile their customers and provide them with personalized reading recommendations. It should also be appreciated that customer integration is different from customer relationship management. Whereas the latter focuses on gaining knowledge about the customer, customer integration suggests gaining knowledge of the customer (Prahalad and Ramaswamy, 2000).

Recent research argues that the distinguishing feature of this new scenario is that consumers become a source of knowledge for the corporation. Thinking about the customer as a source of knowledge requires a shift in mindset: it means treating the consumer as a source of value for the company, not simply as a recipient of products and services. Knowledge has long been recognized as the primary value-generator for cutting-edge companies. But this knowledge was largely sought within corporate boundaries (e.g. Davenport and Prusak, 1998). The shifting mindset enables companies to look outside corporate boundaries for valuable knowledge. As a matter of fact, the very locus of knowledge seems to shift from within to outside corporate boundaries, as recent strategy literature evidences (Prahalad and Ramaswamy, 2000).

The important questions become: to what ends can customer competence be co-opted?, and how can customer competence be co-opted? Regarding the first question: it would appear that the most important and also the most challenging purpose of customer integration, is the development of new products and services, i.e. constructing new value propositions. This requires the emancipation of customers from passive audience to co-creators of organizational value. Based on a review of the still evolving literature in this realm, two basic ways in which such empowerment can be achieved are: first through physically working with the customer, and second through virtual interaction (e.g. Gibbert, Leibold, and Voelpel, 2001).
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Approaches of physical interaction exist where customers are actively involved in product testing. Companies are now moving beyond the testing of products in usability laboratories and are starting to test them in customer environments. For example, more than 650,000 customers tested a beta version of Microsoft’s Windows 2000 and shared their ideas for improving some of the product’s features with the software giant. The idea of the customer as part of an enhanced value-creation network, envisions them as co-developers of personalized experiences. This would further help customers understand how the tested product could benefit their businesses. Many were even prepared to pay Microsoft a fee for this experience. The value of the collective R&D investment by Microsoft’s customers in co-developing Windows was estimated at more than $500 million worth of time, effort and fees (Prahalad and Ramaswamy, 2000).

With the help of the Internet, co-opting customer competence can also be by way of virtual interaction. Software development is a case in point. At Microsoft, customers act as product testers in their native environments. Internet giants Cisco and Dell computers go even one step further. These two companies give their customers access to their information and knowledge repositories through an on-line service that enables Cisco’s customers to engage in dialogue. In this way, Cisco’s customer community jointly solves the problems encountered by other customers and each customer has access to Cisco’s knowledge base and user community (Sampler, 2001; Prahalad and Ramaswamy, 2000).

6.2.3. Co-evolving with the knowledge landscape

James Moore popularized the concept of co-evolving with the knowledge landscape. In his book, entitled ‘The Death of Competition,’ Moore writes that today

“companies need to co-evolve with others in the environment, a process that involves cooperation as well as conflict. It takes generating shared visions, forming alliances, negotiating deals, and managing complex relationships” (Moore, 1993 cited in Lissack and Roos, 2001: 15, emphasis added).

The term co-evolution originated in biology. It refers to successive changes among two or more ecologically interdependent but unique species so that their evolutionary trajectories become intertwined over time. In other words, as these species adapt to their environment, they also adapt to one another. The result is an ecosystem of
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partially interdependent species that continuously adapt to one another. This interdependence is either symbiotic (each species helps one another), or commensalist (one species uses another, Eisenhardt and Galunic, 2001: 92).

Literature shows that the concept of co-evolution has been translated from biology to the strategy realm. Moore (1993) was among the first to develop a new ecology of competition, building on predator and prey analogies. Lane and Maxfield (1993) explained how co-evolutionary views could help explain the phenomenon of collaborative relationships in business, i.e. such relationships that are mutually reinforcing. Along similar lines, a number of authors were found to be drawing on complexity theory to explain co-evolutionary phenomena in business (e.g. Kauffman, 1995). More recently, Eisenhardt’s work in the field of co-evolution has come to prominence (e.g. Eisenhardt and Sull, 2000; Eisenhardt and Galunic, 2001; Eisenhardt and Brown, 1998).

The common denominator among these contributions is their viewing firms not as a member of a single industry, but as part of a business ecosystem that crosses a variety of industries. In a business ecosystem, capabilities co-evolve around new innovations and technologies. Moore has found that in business ecosystems, firms work both collaboratively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations (Moore, 1993: 76; also Brandenburger and Nalebuff, 1996). Typically, such ecosystems revolve around the exchange of knowledge, resulting in so-called ‘knowledge landscapes’ (Oliver and Roos, 2000).

Knowledge landscapes are particularly prevalent in technologically advanced fields, such as biotechnology, (e.g. Powell, 1998), or in the semiconductor and electronics field (e.g. Grindley and Teece, 1997). However, co-evolution in knowledge landscapes does not seem restricted to technologically advanced fields, and appears to assume wide applicability to a range of industries (Sveiby and Lloyd, 1997; Stewart, 1998). For example, Apple Computer can be seen as the leader in a co-evolutionary process that crosses at least four major industries: personal computers, consumer electronics, information and communications. Co-evolution with the knowledge landscape surrounding Apple computers encompasses an extended web of suppliers that includes Motorola and Sony and a large number of customers in various market segments (Moore, 1993: 76).
The next question becomes: *how companies can co-evolve with the knowledge landscape?* The literature in the realm of co-evolving with knowledge landscapes was found to be in a fairly evolving state, and concrete recommendations and their discussion should therefore be done carefully. However, based on her exposure to current thinking, it seems safe to consider Eisenhardt’s work as a standard reference. The key idea in her work is the pursuit to capture cross-business synergies across individual units in an ecosystem. This approach has been referred to as ‘patching’ (Eisenhardt and Brown, 1999, drawing on the work of the complexity scientist Kauffman, 1995).

Eisenhardt coined the term *patching* to illustrate co-evolutionary processes in co-evolving with the knowledge landscape (Eisenhardt and Brown, 1999; Eisenhardt and Sull, 2001). Patching is the frequent re-mapping of businesses in a corporation to fit changing market opportunities. Eisenhardt describes the process of patching as follows:

“With patching, corporate executives set the lineup of businesses with the corporation and keep it aligned with shifting markets.... In turbulent markets, business and opportunities are constantly falling out of alignment. New technologies, novel products and services, and emerging markets create fresh opportunities. Converging markets produce more. And of course, some markets fade. As a result, the clear-cut partitioning of businesses into neat, equidistant rectangles on an organizational chart becomes out of date as opportunities come and go, collide, and shrink. In this landscape of continuous flux, corporate level strategists must continually re-map their businesses to market opportunities” (Eisenhardt and Brown, 1999: 75-82).

Eisenhardt further describes patching as involving at least two diametrically opposed approaches: first ‘splitting,’ and second ‘combining’ businesses within the corporation. Dell Computers was cited as an example of using *splitting* to focus more closely on target markets. In 1994, Dell Computers split into two segments. The transaction segment dealt with the customers who bought equipment in quantities of one or two. The relationship segment catered to customers who bought in greater quantities, from 50 to 1000 computers. By 1996, Dell’s managers had split the company into six segments. According to Eisenhardt and Brown, the Dell company
Eisenhardt and Brown describe *combination* as the second approach to patching. Ironically, combining is the exact opposite of splitting, but was observed to perform very well, especially at the interface between two or more industries. Hewlett Packard provides a case in point. According to Eisenhardt and Brown, Hewlett Packard’s managers have relied on a wider repertoire of patching maneuvers than most managers in other firms. In one move, managers at Hewlett Packard combined a new networked laser-jet printer business (based on an emergent technology for an established market) with another printing business (based on an established technology). The rationale was twofold: to transfer market knowledge from the older business unit to the new one, and to fund the new business so that it could take advantage of the emerging opportunity in the marketplace (Eisenhardt and Brown, 1999: 76).

According to Eisenhardt and Brown, a critical variable in enabling co-evolution through patching is the size of the individual patches, the logic being that the more dynamic the market, the smaller the patch. Eisenhardt explains

“... The uncertainty of the market also affects optimal patch size. As a rule of thumb, more turbulent markets favor focus and agility – and hence small size – whereas more static markets favor economies of scale and hence large size.... The more uncertain the market, the smaller the chunks” (Eisenhardt and Brown, 1999: 76-78).

6.3. Step three: Realizing imaginative strategies

The previous section discussed how challenging imagination can contribute to conceiving imaginative strategies, i.e. to strategic landscaping and ascertaining what the firm can do. This section discusses how challenging imagination can contribute to sound navigation of the competitive landscape over time. Following Sun Tzu, realizing imaginative strategies can be achieved by focusing on three mutually exclusive and collectively exhaustive imagination levers. The first lever discusses how imaginative strategies can be realized by focusing on a set of surprisingly simple rules. Blurring boundaries between the firm, its environment, firm partners, competitors, and even customers, suggests building a shared identity among these...
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players (the second imagination lever), but also demands heedful approaches to interacting with them (the third imagination lever).

6.3.1. Following simple rules

Several authors have emphasized that simplicity is vital for good strategy (e.g. Burgelman, 2002; Eisenhardt and Sull, 2001; Porter, 2001). Paradoxically, the more complex the business environment, the simpler the rules:

“When the business landscape was simple, companies could afford to have complex strategies. But now that the business is so complex, they need to simplify. Smart companies have done just that with a new approach: a few straightforward, hard-and-fast rules that define direction without confining it” (Eisenhardt and Sull, 2001: 107).

Simple rules are derived from complexity theory’s ‘simple guiding principles’ (e.g. Kauffman, 1995), which suggest that complex systems tend to evolve by following surprisingly simple principles. Eisenhardt and Sull maintain that the same applies to a business environment that is fast changing, and unpredictable. The success of companies in such environments usually defies common wisdom of strategy making. A case in point is Yahoo! The Internet company enjoyed an annual sales growth approaching 200 percent, and a market capitalization that has exceeded that of the Walt Disney Company. However, the success of Yahoo! is not easily explained using descriptive imagination (e.g. Porter, 1980). To illustrate, Yahoo’s success cannot be attributed to an attractive industry structure, quite the obverse: intense rivalries, instant imitators, and price-conscious customers, who often refuse to pay at all, frequently characterize the Internet’s competitive dynamics. Similarly, it seems difficult to explain Yahoo’s success from the resource-based perspective (i.e. from the vantage point of creative imagination). To illustrate, Yahoo’s founders disposed of little more proprietary and difficult-to-imitate resources than a computer and an entrepreneurial spirit when they started the company (Eisenhardt and Sull, 2001: 107-108).

The question then becomes: how can the successes of companies such as Yahoo! be explained? Eisenhardt and Sull elucidate that in such markets crafting strategy should be opportunity-driven. The authors further explain that in fast changing, complex markets, companies can learn much from entrepreneurs, who typically use an
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opportunity-driven approach to strategizing. The rationale is that companies who want to succeed in such markets need a mindset that is geared towards capturing unanticipated, fleeting opportunities (Eisenhardt and Sull, 2001: 108; Eisenhardt and Brown, 1998: 76).

Another important question that managers should ask themselves is whether following simple rules is applicable to all industries in which they compete. According to Eisenhardt and Sull, the approach of following simple rules is applicable across all industries, but the authors mostly cite examples from the high-tech industries.

Evidence of the applicability of simple rules across industries is given in a letter to the editor of the Harvard Business Review that followed up on Eisenhardt and Sull's original article in the same journal (Campbell, 2001: 149), in which it is contended that simple rules do not only apply to start-up companies operating in fast-moving, high-tech environments. For example, 3M’s ‘25 percent margins, or 15 percent of time for skunk works,’ seem to validate the relevance of simple rules for mature companies, the author explains. Perhaps the best-known example of a mature company that operates in a relatively mature market is General Electric. General Electric’s CEO Jack Welch’s simple rules approach calls for “speed, simplicity, and self-confidence.”

Given their relevance across industries, the next question becomes how simple rules can be operationalized in any given industry. For the purpose of this dissertation, Eisenhardt and Sull’s original shortlist of five exemplary simple rules can be condensed into three main rules that focus on different stages of pursuing a given opportunity.

- The first main rule is that ‘boundary rules’ focus managers on which opportunities can be pursued and which lie outside the scope, and apply to the initial stage of opportunity capturing. An example of a boundary rule cited by the authors is Cisco’s acquisition rule that decrees that companies to be acquired must have no more than 75 employees, 75 percent of whom need to be engineers.
- The second main rule is that ‘timing rules’ are designed to synchronize managers with the pace of emerging opportunities in the market. Timing rules apply to the stage when an opportunity has been observed and is being realized. An example of timing rules was Nortel, which decreed that product
development teams must know when a product has to be delivered to the leading customer to win, and that product development time must be less than 18 months.

- The third main rule is that ‘exit rules’ help managers to decide when to pull out of yesterday’s opportunities. An example of exit rules is Oticon’s rule for abandoning projects in development: If a key member leaves the project to work for another company, the project is discontinued (Eisenhardt and Sull, 2001: 110-112).

The question of what exactly simple rules actually are, becomes even more important in view of the fact that some companies that apparently used simple rules were not at all successful. An example of a company that failed disastrously using a simple rule approach is AT&T’s simple rule regarding corporate diversification into ‘computers and telecom’ (Campbell, 2001: 149). What simple rules are not should therefore also be appreciated. According to Eisenhardt and Sull, simple rules must above all not be broad or vague. At AT&T, for example, unlike mission and vision statements, simple rules were designed to apply to a very specific part of AT&T’s operations, such as customer care. Rather than applying simple rules across the board from purchasing to product innovation, simple rules should be tailored to a specific process, such as the previously mentioned customer care. Thus simple rules must not be confused with mission or vision statements (Eisenhardt and Sull, 2001: 112).

6.3.2. Focusing on heedful interaction

Heedful interaction is a term coined by the Imagination Lab Foundation in Lausanne, Switzerland, building on earlier work by Weick and Roberts (1993). Organization scientists Weick and Roberts developed the concept of ‘heedfulness’ to explain organizational performance in situations requiring the collaboration of individuals with diverging goals, hence the need for heedful, or careful interaction by the parties within a corporation. The authors built on the social psychologist Ryle to define the notion of heedful interaction:

“The word ‘heed’ captures an important set of qualities of mind that elude the more stark vocabulary of cognition. These nuances of heed are especially appropriate to our interest in systems preoccupied with failure-free performance. People act heedfully when they act more or less carefully, critically, consistently, purposefully, attentively, studiously, vigilantly,
The authors are careful to distinguish heedful interaction from habitual interaction. In habitual interaction, each performance is a replication of its predecessor, whereas in heedful performance, each action is modified by its predecessor (Ryle, 1949, cited in Weick and Roberts, 1993: 362). The authors also link heedfulness in interacting with firm performance. If heed were to decline, the authors maintain, performance would decline too: performance would then become unmindful, unconcerned, and indifferent (Weick and Roberts, 1993: 362).

In an ongoing research project at the Imagination Lab Foundation, the notion of heedful interaction is being translated from the level of the individual in an organization to the level of organizations and their interaction with key stakeholders, including customers, suppliers, and the wider social and political realm. This research finds that on the level of organizations interacting heedfully, a key challenge faced is to purposefully manage knowledge flows between the key stakeholders involved. Managing such knowledge flows across corporate boundaries becomes particularly important in contemporary business landscapes, which are frequently characterized by complex structures of interwoven knowledge networks of work group relationships, strategic alliances, and customer networks (Lissack and Roos, 2001: 4; Bardaracco, 1991: 1).

However, the mobility of the knowledge asset exchanged in these networks need not necessarily be viewed as desirable. Teece (1998) observed that there is a simple but powerful relationship between the codification of knowledge and the cost of its transfer. Simply stated, according to Teece, the more a given item of knowledge has been codified (i.e. made explicit), the more economically it can be transferred, but also imitated (Teece, 1998). It would appear that the more explicit and codified knowledge is, the more economically it can be imitated, unless proper protection mechanisms are in place (von Krogh and Roos, 1995; Polanyi, 1958, 1966).

The key challenge in heedful interaction is to manage the ambiguous features of knowledge. To illustrate: among the most important peculiarities of knowledge as an organizational resource is the fact that controlling the mobility of knowledge assets is decidedly difficult to maintain because features restraining involuntary transfer tend to inhibit voluntary transfer. Likewise, the very properties that make knowledge difficult
to imitate, often also make it difficult to impart within the corporation (Spender, 1996a,b, Grant, 1996). Some of the sources of competitive advantage may even be so complex that the firm itself, let alone competitors, has difficulty in understanding them (Teece, 1998). On the one hand, heedful interaction therefore requires protection mechanisms to inhibit knowledge imitation by competitors, while; on the other hand, effective value extraction from knowledge requires the firm itself to be capable of replicating it domestically and in strategic partnerships with key stakeholders (Teece, 1998).

Literature suggests managing the ‘appropriability’ of knowledge as the solution to the challenge in heedful interaction. Appropriability refers to the ability of the owner of a resource to receive a return equal to the value created by this resource (Grant, 1996; Teece, 1998). Knowledge appears to be subject to unique problems of appropriability, because the features that make it easy to transfer also make it easy to imitate. In an attempt to come to terms with the strategic implications arising from this difficulty, scholars generally agree that appropriability should be seen as dependent on the purposeful management of, first, internal and, second, external replication (e.g. Nelson and Winter, 1982, Winter, 1987; Teece, 1998).

**Internal replication** involves re-deploying knowledge from one concrete economic setting to another within corporate boundaries. Researchers agree that often, but not always, such redeployment crosses functional boundaries within the firm. Since individuals need to specialize in knowledge acquisition, and if producing goods and services requires the application of many types of knowledge, production must be organized so as to assemble these many types of knowledge, while preserving specialization by individuals. The firm is then an organization that has to resolve this problem. It permits individual employees to specialize in developing particular expertise, while establishing mechanisms through which these individuals can integrate their different, and often-discrete, knowledge bases (Grant, 1996; Spender, 1996a,b; Nonaka and Takeuchi, 1995). Research has shown that while a discrete, functional, departmentalized division of labor may encourage local innovation, it tends to encourage the formation of localized codes of conduct and procedures as well, thereby making sharing of knowledge across functional boundaries difficult (e.g. Spender, 1996a,b). Scholars conclude that the internal replication of knowledge can be handicapped by traditions of intra-organizational groupings. Schonberger, for instance, has alerted management to the fact that functional organizational groupings
representing, for example, production and distribution, may in fact be like ‘castle walls:’ thick and resistant to interaction. To illustrate: a communicative dysfunction between the supply or production ‘castle’ and the marketing or distribution ‘castle’ may often be major causes of the problems, such as misguided product decisions, and poor service to the best customers (Schonberger, 1996; Grant, 1996). Thus, managing internal replication can be seen as the purposeful process of coordinating internal knowledge practice with the aim of achieving high replicability of relevant knowledge inside corporate boundaries.

*External replication* also involves the deployment of organizational knowledge assets from one concrete economic setting to another, but across, rather than within, corporate boundaries. Research shows that external replication is distinctly different in its general mindset than that required from internal replication, since involuntary external replication, often called imitation, is encouraged by voluntary external replication, such as in the case of technology sharing in strategic alliances (e.g. Teece, 1998). Unlike internal replication, knowledge in external replication typically crosses corporate, rather than functional, boundaries. Due to the contextual dependence of much organizational knowledge assets, it may be easier to share knowledge across corporate boundaries simply because such disclosure does not usually cross-functional boundaries (Brown and Duguid, 1998). To illustrate: when the knowledge-sharing parties ‘talk the same language,’ spreading ideas may, in fact, be easier between the same department of different companies in different firms (e.g. in the case where engineers from one partner assimilate the process technology of engineers from the other partner in a strategic alliance), than between different departments in the same company. In such conditions, practices are often fairly similar, and so barriers between different units may be relatively low (Hamel, Doz and Prahalad, 1989). Indeed, in this scenario it may be more difficult to stop ideas from spreading than to spread them. Knowledge that is ‘sticky’ (i.e. relatively non-fluid) inside can become remarkably fluid outside.

Overall, therefore, heedful interaction denotes the purposeful act of achieving high replicability in selected and appropriate circles of organizational influence (particularly internally), while limiting, or controlling the flow of knowledge in others (particularly externally).
6.3.3. Building shared identity

While the previous imagination lever focused on the interaction of companies with one another, this lever focuses on the interaction of companies with its stakeholders and shareholders. Oliver and Roos explain that an important source of stability in our increasingly complex business environment is our identity (Oliver and Roos, 2000). Recent research shows that this identity, however, is no longer restricted to the individual company, but includes the company’s relevant partners: when companies co-evolve with knowledge landscapes and focus on coherence, shared identity emerges, particularly between players such as the company itself, its customers, the public, and its employees (Hilb, 1997). What are the drivers for shared identity? Consonant with Kim and Mauborgne (1999a,b), as well as Hamel (2000), Leibold explains that we no longer live in an era of competitive strategy, i.e. one that only produces win or lose scenarios. Instead, it is argued that we now live in an era of cooperative strategy.

“Even in a cooperative environment, parties divide up the wealth to create win/win. The pie, however, often remains the same. With a collaborative approach, symbiosis creates a larger pie to share and more pies to divide. Alliances of every dimension are the natural order of the day in realization that go-it-alone strategies are almost always sub optimal” (Leibold, 2001: 7).

The need for cooperative strategy is accentuated by the convergence of industries (Hamel and Prahalad, 1996: 240). In cooperative strategy, it will become increasingly common to join hands with former competitors, former adversaries, and former customers, who were previously considered to have interests different from ours. Indeed, much of the recent literature has either implicitly or explicitly tackled the issue of building shared identity, as evidenced by articles emphasizing broadened collaboration by ‘bringing Silicon Valley inside’ (Hamel, 1999), ‘judo strategy’ (Yoffie and Cusumano, 1999), ‘fair process’ (Kim and Mauborgne, 1997b), and the dismissal of the traditional ‘predator and prey’ notions of interaction among businesses (Moore, 1993). Such broadened collaboration manifests itself in blurring boundaries – between nations, between industries, between sectors of the economy, between organizations, and between functions inside an organization (Leibold, 2001: 12).

According to recent research evidence, blurring boundaries causes identities to coalesce into what is called ‘shared’ identity (e.g. Oliver and Roos, 2000). An
important final imagination lever in realizing challenging strategies therefore is to focus on building shared identity with all relevant parties, in order to ‘create a larger pie for everyone.’ Issues such as responsible competition, creativity and innovation to avoid head-to-head competition need to be addressed when building shared identity. Furthermore, moral issues need to be incorporated into the debate. Most importantly, trust becomes a precious value. With the emergence of interdependent economy, collaborative faith is essential (Oliver and Roos, 2000; Brandenburger and Nalebuff, 1996; Moore, 1993).

The next question becomes: how to build a shared identity? Eisenhardt and Brown (1998), as well as Lane and Maxfield (1996) provide useful pointers that can serve as a framework for building shared identity. First, it is emphasized that building shared identity cannot be controlled or planned. It is not about planning an approach and predicting how it will unfold. The future, the authors argue, is too uncertain for pinpoint accuracy. Instead, and consistent with other recent work by prominent strategy scholars (e.g. Mintzberg and Lampel, 1999), serendipity in building shared identity is advocated: “it is about making some moves, observing what happens, and continuing with the ones that seem to work” (Eisenhardt and Brown, 1998: 8).

It must, second, be appreciated that building shared identity is not necessarily efficient in the short term. Indeed, it may often involve accepting inefficiency in the short term. Eisenhardt and Brown elucidate that building shared identity

“is about stumbling into the wrong markets, making mistakes, bouncing back, and falling into the right ones. It is about duplication, misfit and error” (Eisenhardt and Brown, 1998: 8).

Microsoft is an illustrative example of inefficiency in building shared identity. Eisenhardt and Brown explain that the firm literally wasted resources on developing a proprietary version of the Microsoft Network, a misstep that ultimately cost Microsoft millions. Money was spent on technologies that were later bought from other companies and on promoting products that were eventually dropped. According to the authors, Microsoft passed up acquisitions that were later far more expensive when they had to be purchased as licensing arrangements (Eisenhardt and Brown, 1998: 10).
Third, Lane and Maxfield emphasize that building shared identity requires heterogeneity. This means that participating agents have to differ from one another in key respects. They may have different competencies, or access to particular networks or other agents. The authors explain that combining different competence bases can generate new kinds of competence that resides in the relationship itself, rather than in its constituent agents. The authors call this process bridging ‘structural holes’ (Lane and Maxfield, 1996: 228).

Fourth, mutual directedness was found to be strongly associated with the building of shared identity. Lane and Maxfield make it very clear that mutual directedness goes beyond common interests and different perspectives. They must also seek one another out and develop a recurring pattern of interactions from which a mutually reinforcing relationship emerges. The authors also found that the willingness of the interacting agents to do this depends on the knowledge each has of the other’s identity. Trust has been found to be a key ingredient in fostering this relationship. An interesting finding by the authors is that this trust, rather than being a precondition, is often an emergent property of building shared identity: it grows as participants become aware of the unforeseen benefits that the relationship is generating (Lane and Maxfield, 1996: 228).

7. Concluding observations and implications for the empirical part

The theoretical part of this dissertation has developed an integrated framework for envisaging, conceiving, and realizing imaginative strategies, called the strategy-making matrix. The framework was developed in a deductive way and is based on an internally consistent theoretical perspective drawing on previous work in strategy process research (which answers the question of how a strategy is made), and strategy content research (which answers the question what strategic positions of the firm lead to optimal performance under varying environmental circumstances):

- The strategy-making matrix sees the question of how a strategy is made as a sequential process involving a number of steps (van de Ven, 1992, as well as Schendel and Hofer, 1979). On the horizontal axis, the strategy-making matrix argues that crafting strategy imaginatively can usefully be conceptualized as a process involving the three generic steps in the strategy-making process: envisaging, conceiving, and realizing strategies.
Theoretical Framework

- The strategy-making matrix further sees what is decided in this process as contingent upon an important source of such decisions: the human imagination (Roos and Victor, 1999; Kearney, 1988; Hamel, 2000). On the vertical axis, the strategy-making matrix argues that imaginative strategies can best be envisaged, conceived, and realized by considering all three thrusts of strategy making: descriptive, creative, and challenging imagination.

Figure 8 provides an overview of the strategy-making matrix that was developed in the theoretical part.

Figure 8: The strategy-making matrix (source: author).

This section summarizes the main conclusions of the theoretical part in terms of the literatures on which the strategy-making matrix is based (strategy making, strategy content and strategy process; definition of key concepts in chapter 1), and discusses the implications of these conclusions for the empirical part, which follows in the next chapter.

The overall literature on strategy making was found to well researched. However, earlier contributions were largely non-integrative and focused on either strategy
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process research literatures (how) or insights from the strategy content realm (what). Although considerable research has been focused on strategy content in terms of specific industry (Porter, 1980, 1985, 1991, 1998, 2001), or resource structures (Barney, 1991; Prahalad and Hamel, 1990; Peteraf, 1993; Wernerfelt, 1984, 1995), less attention has been devoted to how these structures arise in the first place. Similarly, while much strategy process research has examined contextual factors, decision-making processes, intuitive and analytic aspects (e.g. Mintzberg, 1976, and Waters, 1985; Pettigrew, 1985), less study has been done on specific managerial practices determining the origins of and the connection to these industry and resource positions. In other words, upon an extensive analysis, the conceptual development at the interface between strategy process and strategy content research seems to be in a preliminary state (e.g. Schendel, 1992; Rumelt, Schendel, and Teece, 1991, 1994; Chakravarthy and Doz, 1992). An important contribution can therefore be made by responding to calls by renowned scholars such as Bower (1996), who emphasized that a key reason behind the limited progress in the strategy making realm has been the absence of an integrated framework based on standard concepts emanating from both strategy content and strategy process (Bower, cited in Lovas and Goshal, 2000: 892). To Bower’s observation could be added that such a conceptual framework also needs to be validated empirically.

While interest in the overall strategy process literature was found to be generally high until the mid to late eighties, remarkably little recent attention was found in this stream of thought. The theoretical part has established that strategy process draws on a variety of disciplines, including organizational sociology, decision sciences, psychology, political science, and ethics. This literature appears to be rich in perspectives, empirically complex, and paradigmatically diverse. It would appear that this broad discipline base accounts for the conceptual vagueness, apparently a defining characteristic of the strategy-process literature. In particular, many approaches to categorize the strategy process could be found, with the key question behind these categorizations being what is meant by the term ‘process’ (van de Ven, 1992: 169-175). The quest to clarify the term ‘process’ has led to the interpretation of process as a sequence of events, or, put differently, as distinct steps of a given course that develops over time (van de Ven, 1992). The literature, however, seemed inconclusive with regard to the number of steps in the process of strategy making, and with regard to the role and importance of sequence in these steps. An important contribution can therefore be made by (a) delineating and (b) empirically validating
the role and importance of the three steps in the strategy-making process (envisaging, conceiving, and realizing).

Finally, upon an extensive literature review, the situation of non-integration seems even more severe in the case of the literature on strategy content. In contrast to strategy process research, this field has flourished over the last two decades, and has contributed considerably to our understanding of industry and resource structures (Prahalad and Hamel, 1990; Porter, 1980). However, cross-fertilization between pockets of scholars focusing on either industry or resource structures seems to have been virtually absent (e.g. Roos and Victor, 1999; Lissack and Roos, 1999, 2001; Eisenhardt and Galunic, 2001). Integration between these pockets of scholars is urgently needed (Priem and Butler, 2001a). An important contribution can therefore be made by (a) developing and (b) empirically validating an integrated framework that combines the valuable insights gained in strategy content research.

To conclude the theoretical part of this dissertation by summarizing the above observations: even though the strategy-making matrix is firmly grounded in existing work, its constituent elements have never before been (a) combined in an integrated framework for crafting strategy imaginatively, and (b) tested empirically. The often eloquent calls to arms notwithstanding, there has been much silence on exactly how a diversified firm crafts strategy using the three imaginations (descriptive, creative, and challenging), while considering the three steps (envisaging, conceiving, and realizing). The strategy-making matrix, which combines and systematically analyzes in conjunction the three imaginations and the three steps, must therefore be seen as a new theoretical framework for thinking about crafting strategy in the diversified firm.

The empirical research objective of the following, empirical, part will be to test the propositions comprising the strategy-making matrix in a field setting of the Siemens corporation - a major, diversified firm in the electronics and electrical engineering industry. The empirical study will be guided by the following research questions, which are based on the concluding observations of the theoretical part: in how far is it important to rigorously adhere to a specific framework in crafting strategy imaginatively? What is the relative importance of the three imaginations in this process? And, what is the role and importance of sequencing the steps in this process?
The next chapter first discusses the methodology that seems most advantageous for answering these empirical research questions and then presents the empirical findings made on the basis of the research questions.
Chapter Three: Empirical Study

Having formalized the individual propositions comprising this dissertation’s theoretical argument, analysis now turns to the empirical validation of the strategy-making matrix. For this purpose, and in the light of empirical evidence, the present chapter revisits the propositions comprising the theoretical framework. Thus, while the theoretical validity of the strategy-making matrix was the topic of the previous chapter, this chapter focuses on ascertaining the empirical validity of the framework built.

This chapter first discusses the choice of the adopted research strategy, the single-embedded case study. Particular emphasis is given to a discussion of challenges to validity and reliability associated with the single-embedded case study method. Strategies taken to mitigate these challenges and to ensure validity and reliability of the research findings are discussed next. Thereafter, the theoretical argument of the present dissertation is appraised empirically. For ease of exposition and for readers’ convenience, the empirical analysis is structured in terms of the strategy-making matrix. To illustrate, the three generic steps of strategy making (envisaging, conceiving, and realizing) and the three basic thrusts of strategy making (descriptive, creative, and challenging imagination) are systematically subjected to empirical validation, using data gathered from Siemens AG, a major firm in the electronics and electrical engineering industry.

1. Empirical research objective

The primary research objective of the empirical study is explanatory in the sense of Yin (1994: 17-19), i.e. to empirically validate the logic and soundness of the theoretical propositions comprising the strategy-making matrix by answering the empirical research question:

How does the Siemens corporation craft strategy using the three imaginations (descriptive, creative, and challenging), and the three steps (envisaging, conceiving, and realizing)?
Crafting strategy imaginatively

Based on the theoretical framework developed in the previous chapter, the empirical study endeavors to shed light on the specifics of Siemens’ approach to crafting strategy, by attempting to answer the following empirical research questions:

- In how far is it important to rigorously adhere to a specific framework in crafting strategy imaginatively?
- What is the relative importance of the three imaginations in crafting strategy imaginatively?
- What is the role and importance of sequencing the steps in crafting strategy imaginatively?

The research methodology adopted in the pursuit of these empirical research objectives, and the limitations under which the empirical study was carried out, are discussed next.

2. Research methodology

Research methodology constitutes a broader scientific framework that describes what was done to answer the research objective and questions. Important areas to consider are the choice of research method and design, the choice of research site, and factors limiting the study.

2.1. Research design

The choice of method is critical because it impacts on the approaches and techniques for collecting and analyzing empirical data (Denzin and Lincoln, 1994). This dissertation uses a specific research design, the *single-embedded case study* (Yin, 1994), to learn more about Siemens’ strategy-making behavior. The next sub-sections motivate the choice of the single-embedded case study for the specific research objective of this dissertation. First, a range of other, potentially feasible, methodologies (both quantitative and qualitative) is discussed in terms of their suitability for the research objective, in order to show why the overall case study method seems best suited for the purpose of this dissertation. Since there are several methodological approaches under the case study roof, with each being advantageous under certain conditions, this section second also discusses why the single-embedded
Empirical Study

case study appears to be the most appropriate type of case study for the present dissertation. Finally, the present section demonstrates why the Siemens company appears to represent an exceptionally advantageous research site for conducting the case study.

2.1.1. Rationale for adopting the overall case study method

Porter has made the value of the overall case study method for the study of strategy making very clear. According to this author, the need for more and better empirical testing is a recurring issue when dealing with the subject of strategy making. Porter is convinced that while academic journals have traditionally not accepted or encouraged the deep examination of case studies, the nature of strategy requires it. The author concludes that at this stage of the field’s development the greater use of case studies in both books and articles will be necessary for real progress (Porter, 1991: 99). Three further reasons that seem to make the adoption of the overall case study method very promising, specifically for the purpose of the present dissertation, can be added to Porter’s statement:

- Most researchers agree on the type of research question as the first and foremost condition for choosing among the various research strategies. The case study method is most appropriate where ‘how’ or ‘why’ research questions are asked (Yin, 1981: 58 – 59, 1994: 15 – 20). ‘How,’ or ‘why’ questions are likely to lead to the use of case studies, since “such questions deal with operational links needed to be traced over time, rather than mere frequencies or incidence” (Yin, 1994: 18). This clearly makes the case study method more advantageous for the present dissertation than surveys would. As a matter of fact, several researchers interested in studying strategy making have stressed the importance of longitudinal research, for which surveys are ill-equipped (see, e.g. Helfat, 2000; Roos and Victor, 1999; Eisenhardt and Martin, 2000; Burgelman, 2002; Pettigrew, 1990). The case study method’s ability to incorporate operational links over time in the study of strategy making makes it more advantageous for the purpose of this dissertation than surveys, which traditionally focus on events at a given point in time (Yin, 1994). The overall case study method was therefore found to best accommodate the research questions of the present dissertation, which asks ‘how’ Siemens uses the three imaginations and looks into ‘how’ the three steps in strategy making evolve over time.
The second reason for adopting the case study approach is the extent of control that the researcher exerts over the research objects (see, e.g. Reason and Rowan, 1981; Yin, 1981, 1994). Yin emphasizes that the extent of control over behavioral events and the focus on contemporary events, as opposed to historical events, demand the usage of the case study method (Yin, 1994: 19). In the words of Yin, the case study has a distinct advantage when the researcher “has little or no control” over the research object (Yin, 1994: 20). The researcher’s lack of manipulation of the research object distinguishes the case study method from other strategies such as experiments and action research, which demand control or interference by the researcher (Reason and Rowan, 1981; Torbert, 1976). The extent of control also distinguishes it from historical studies, which are the preferred research approach when there is virtually no access or control. The case study is therefore uniquely qualified for examining contemporary events when the relevant behaviors cannot be manipulated (Yin, 1994: 19). Since this study of strategy making focuses on contemporary events where the relevant behaviors cannot be manipulated, the overall case-study method seems highly appropriate.

The third reason for adopting the overall case study method is that this approach is uniquely suited for examining a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident and when multiple sources of evidence are being used in investigating the phenomenon (Yin, 1994: 23). The explicit emphasis on, and incorporation of, the context distinguishes the case study method from the experiment and the survey. The latter seeks to deliberately divorce a phenomenon from its context in order to purposefully limit the number of variables to be analyzed (Denzin and Lincoln, 1994; Yin, 1994). Yet context and the diversity of variables have been emphasized as pertinent, if not central, to the study of strategy making (Hansen and von Oetinger, 2000; Beer and Noriha, 2000, Eisenstat and Spector, 1990; Eisenhardt and Martin, 2000; Eisenhardt and Sull, 2001; Mintzberg and Quinn, 1991). A key advantage of the case study method is that it allows the explicit consideration of contextual factors and a multitude of variables to which other methods would be largely insensitive. The case study method, because of its holistic and multifaceted nature, is therefore considered particularly appropriate for researching complex phenomena like crafting strategy imaginatively in the diversified firm.
2.1.2. **Rationale for adopting the single-embedded case study**

The previous section provided the rationale for adopting the overall case study method in general. This section discusses the rationale for adopting a specific type of case study, the single-embedded case study (Yin, 1994).

There are several types of case studies, of which the most appropriate type for the purpose of this dissertation needs to be selected. A first step in selecting the most appropriate type of case study is the identification of an adequate approach for differentiating one type of case study from another. In the social sciences, several competing, and sometimes contradictory, categorization approaches for case study can be found (for an overview, see Denzin and Lincoln, 1994). The most influential categorization of case studies would seem to be the one by Yin (1994), which is adopted for this dissertation. The basic distinction in Yin’s categorization approach revolves around the question whether or not a given study investigates multiple cases, and whether or not it involves a single unit of analysis or multiple units of analysis. If one case study involving several units of analysis is investigated (such as several key projects that are investigated within one corporate context), Yin speaks of a single-embedded case study (Yin, 1994: 46-50). Given the research objective, a case study was needed that allows for the testing of a theory or a framework. The single-embedded case study is the most promising for the present dissertation for the following two reasons:

- First, and foremost, according to Yin, the single-embedded case study method is appropriate under conditions where the case investigated is critical and/or revelatory. Critical cases allow the researcher to confirm, challenge or extend a theory, or framework, i.e. they allow for the validation of a framework (Yin, 1994: 47). The present dissertation falls into the category of critical cases, since it seeks to empirically validate a concrete theoretical framework, the strategy-making matrix. According to Yin, revelatory cases are those that are of scientific interest because a researcher has the opportunity to observe and analyze a phenomenon previously inaccessible to scientific investigation (Yin, 1994: 48). In the extensive literature review conducted for this dissertation, only two studies have been found that focus on Siemens’ strategy (Kim and Mauborgne, 1997b; Kennedy, 1998). However, these studies focused on strategic change at the company, and not on strategy making, as this dissertation does (chapter 1, definition of key concepts, discusses why strategic
change is not within the scope of analysis of the present dissertation). Since this dissertation empirically validated a concrete theoretical framework in an organizational context previously inaccessible to scientific investigation, the Siemens case study is both critical and revelatory, and the adoption of the single-embedded case study method seems highly appropriate.

- Second, single-embedded case studies are most promising when the same case study involves several units of analysis, i.e. when attention is also given to one subunit or several subunits (Yin, 1994: 46-48). The present dissertation represents such an embedded case study, since it involved three units of analysis. As will be discussed shortly, the Siemens case study investigated one umbrella project and two sub-projects that were embedded in the umbrella project that were ongoing at the time of the research. The umbrella project was called the ‘Top Plus Project,’ and the sub-projects were called the ‘Ten Point Program,’ and ‘Operation 2003’ (section 4.3. in the present chapter provides a full discussion of the three key projects). The focus of this dissertation on three key projects is in line with the literature, in which several researchers have emphasized the importance of studying strategy making using several interconnected units of analysis (Eisenhardt, 1989, and Martin, 2000; van de Ven, 1992; Roos and Victor, 1999).

In conclusion, the overall case study approach is appropriate for studying strategy making (Porter, 1991: 99; Yin, 1994: 50). A specific type of case study, the single-embedded case study, is eminently justifiable under conditions where the case represents a critical test of a theory or framework, where the case serves a revelatory purpose, and where the case involves several subcases, or units of analysis. The present case study of strategy making represents both a critical case and a revelatory case, and involves three units of analysis. The single-embedded case study is therefore the most appropriate method for the purpose of this dissertation.

2.1.3. Advantages of studying strategy making at Siemens

The previous two sections gave the rationale for adopting a particular research strategy, the single-embedded case study. This section gives the rationale for the selection of the research setting, the Siemens company.
A key question to be answered is: why is the Siemens corporation a particularly appropriate setting for studying strategy making? Several methodology scholars have emphasized that the most important aspect of case study is the identification of the research setting, and the quality of the analysis and findings depends on choosing this setting carefully (Stake, 1995: 243). This endeavor is commonly referred to as ‘theoretical sampling’ (e.g. by Denzin and Lincoln, 1994) to suggest that the choice of a particular research setting for the case study needs to be based on systematic selection criteria, which need to be explicitly stated (e.g. Yin, 1994, Stake, 1995; Miles and Huberman, 1984). Four features, in particular, made the company very attractive as a research site from both the theoretical and practical perspectives:

- First, convenience of access constitutes a rationale for selecting a research site. Indeed, as was discussed in the theoretical background to this dissertation (section 1.2, chapter one), scholars have recently criticized strategy-making research for its lack of empirical grounding (e.g. Eisenhardt and Martin, 2000; Eisenhardt and Galunic, 2001; Williamson, 1999; Priem and Butler, 2001a). This inadequacy is typically explained by the difficulty researchers have in obtaining access to organizations. In the case of this dissertation, the researcher’s contact with the Siemens corporation was formal (part of the funding of this research was granted by the Siemens corporation), which greatly facilitated access to the research site.

- Second, at the time of the field study it was a very opportune time to study strategy-making endeavors at Siemens, since the company was busy with a major strategy-making program (the Top Plus Program), and two embedded sub-projects (the Ten Point Program, and Operation 2003). It should be emphasized that this was very fortunate, since it allowed the researcher the opportunity of studying strategy making in real-time, thereby enhancing construct and internal validity of the strategy-making matrix by avoiding problems stemming from retrospective data (such as post-event rationalizations; sections 3.3.1. and 3.3.2. discuss construct validity and internal validity in greater depth).9

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9 See Burgelman (1996), as well as Eisenhardt (1989) for the most important problems associated with retrospective data.
Third, Siemens, being a multidivisional firm, is involved in all the activities associated with a large manufacturing firm (research, product development, manufacturing, marketing and sales). These activities in Siemens’ business units furthermore span a wide variety of industries, including telephony, electronics, medical solutions, transportation systems, automation and control, and consulting. They introduced activities and levels of complexity in the data that are not usually available in other, very recent studies of strategy making, which in general focus exclusively on one industry (see, e.g. Burgelman, 2002, Lovas and Goshal, 2000, Eisenhardt and Brown, 1998). This is highly advantageous, because it is conducive to the generalizability of the research findings (Eisenhardt, 1989; Stake, 1994; Denzin and Lincoln, 1994).

Finally, although headquartered in Germany, the company is transnational in that it has subsidiaries in most developed markets in the world. This introduced another element of complexity, with the resulting possibility that the findings from the study could be more relevant for other firms (Denzin and Lincoln, 1994; Lovas and Goshal, 2000).

2.2. Limitations of the empirical study

This study is subject to the general limitations associated with field research in one organization (see Burgelman, 1994, as well as Eisenhardt, 1989 for a description of these general limitations). In addition to these general limitations, the empirical study has at least three specific limitations: limitations associated with the single-embedded case study method, limitations due to resource constraints, and finally, limitations associated with the researcher’s possible bias. This section discusses the three specific limitations and also presents the strategies that were taken to minimize the negative impacts of the limitations.

2.2.1. Limitations associated with the research strategy

The research strategy itself engenders several limitations. The previous section has illustrated the advantages of the single-embedded case study method, yet it is as important to discuss the disadvantages of this method (see, e.g. Miles, 1979; Yin, 1981). According to the methodology and strategy researchers, two major limitations have to be taken into account:
First, single-embedded case studies are often criticized because they provide little basis for statistical generalization, i.e. they provide little basis for the endeavor to establish the validity of the findings beyond the immediate context studied (see, e.g. Stake, 1995; Hubermann and Miles, 1994; Yin, 1994). Especially the question: how can you generalize from a single case study?, is a frequently heard challenge to this research strategy, and represents a major drawback of the present Siemens case study (Yin, 1994: 21, 43). Lack of statistical generalization is often attributed to the interest in studying uniqueness, particularity and richness at the expense of generalizability, which is characteristic of this method (e.g. Denzin and Lincoln, 1994). Several researchers have emphasized the benefits of examining several cases within one study to ensure generalizability (see, especially, Yin, 1981: 59 – 64; Miles, 1979, Hubermann and Miles, 1994). Yin argues that such ‘cross-case evidence’ can be used to ensure statistical generalization when at least two cases are shown to support a theory (1994: 62 – 64). Since the strategy-making case study represents a single-embedded case study, i.e. it looks into one corporation only; no claims regarding such statistical generalizability can be made on the basis of the findings. By implication, while the theoretical framework is validated in the empirical study of one company, no inference can be made as to whether the framework constructed also applies to a larger population of companies, or even to a universe of companies (this is discussed in depth in section 3.3.3. that deals with generalizability). The drawback of the present study suggests future research in order to examine if, and under what conditions, the strategy-making matrix could be applied to other companies.

Second, lack of rigor is a noteworthy problem associated with conducting single-embedded case studies. Yin has alerted his readers to the fact that “too many times, the case study investigator has been sloppy, allowed equivocal evidence or biased views to influence the direction of the findings and the conclusions, the result of which are often excessively long, and even unreadable documents” (1994: 21). Particularly problematic with single-embedded case studies seems to be confusion of units of analysis (Stake, 1995; Yin, 1994). As discussed previously, a defining characteristic of this research strategy is that it embeds several subcases or subunits (such as several key projects) within one ‘umbrella case’ (one corporation in which key projects have been taking place). A major weakness of this research strategy is that it
could lead the non-rigorous researcher to focus only on the subunit level, thereby failing to return to, and consider, the larger unit of analysis. Vice versa, potential problems arise when the researcher is incorrectly focused on the larger unit of analysis, thereby failing to examine subunits. Possible results of the former are fragmentation, while the latter may lead to the entire case study being conducted at an abstract level, lacking clear measures or data (Yin, 1994: 50). Several researchers have discovered that a study’s theoretical framework can force the researcher to be systematic and rigorous in the empirical study (Eisenhardt, 1989; Yin, 1994). This dissertation therefore relied on the theoretical framework, the strategy-making matrix, in (a) collecting and (b) analyzing the data. To minimize the effects of a lack of rigor, every care was taken to be as systematic in gathering the data as possible, and to follow the procedures recommended by Yin (1994) closely (section 3.1. discusses the data collection approach of this dissertation). With regard to data analysis, attention was paid to the establishment of a clear chain of evidence (this is discussed in depth in section 3.3.1. that deals with construct validity). Furthermore, great care was devoted to adequate consideration of the units of analysis on the various levels throughout the final report. In this report data associated with either the umbrella project (the Top Plus Program) or the two sub-projects (the Ten Point Program and Operation 2003) are explicitly labeled in order to demonstrate to the reader to which project the recorded data appertain.

2.2.2. Limitations due to resource constraints

The second important limitation regards the constraints in terms of resources encountered by the researcher. Several limitations accruing from resource constraints are noteworthy. First, the resource constraints encountered have made it impossible to conduct a truly longitudinal study. Such studies would, according to van de Ven (1992), run over six to eight years, which was unfortunately not possible in the case of this dissertation. Second, the empirical study was conducted by one researcher, only. This can be a limitation, since the literature emphasizes the benefit of conducting qualitative field research in general (Denzin and Lincoln, 1994), and case study research in particular (Yin, 1994; Stake, 1995) using teams of researchers. The benefit of using a team of researchers, and even using researchers and practitioners for case-writing purposes, has been recently emphasized by Probst:
Empirical Study

“During the joint writing process, managers describe the initial situation regarding the case, the problems they needed to solve, the challenges faced, and then evaluate the results of the project. The group thereafter discusses questions such as how to assess the ‘facts’ presented to them, which features of the case are especially noteworthy, and what they hope to convey to the readers. People from different backgrounds, i.e. managers from the case company, partners, coaches and consultants, and relevant employees, provide input. Case writing therefore not only integrates a wide variety of different viewpoints, the collaborative writing process also provides a final report that differs quite radically from a study written by a single individual” (Probst, 2000: 251).

The author of this dissertation himself also found the usage of teams extremely worthwhile and fruitful when previously conducting case-study research at Siemens (Davenport and Probst, 2000, 2002), and regrets that resource constraints made this possible for the present dissertation.

2.2.3. Limitations due to researcher bias

Case studies conducted by only one researcher could be susceptible to a third limitation: researcher bias. Yin has noted that all other research skills are of limited value if the researcher seeks to substantiate a preconceived position (1994: 65). Several methodology scholars have noted that case researchers are especially prone to bias (Yin, 1994; Stake, 1995; Hubermann and Miles, 1994). The fact that the researcher was an employee of the Siemens corporation could further exacerbate the problem of bias. Yin, for example, has noted that bias might compromise the ability of the researcher to work as an external observer, forcing him to assume positions, or to advocate roles contrary to the interests of good science (Yin, 1994: 93; 1993: 112). Great care was accordingly taken to minimize a possible researcher bias. Three measures were applied to this end:

- First, double-checking that the conclusions were made on the basis of empirical findings through: acceptance of contrary findings, openness to alternative perspectives, and incorporation of rival propositions. This strategy for detecting bias has been noted as particularly effective (Yin, 1994: 65, 1993: 112), and was practiced in the initial formulation of the case study, as well as during its data collection, data analysis, and even its reporting, with rival explanations
being given where relevant. (Later in this chapter this is discussed in more depth in section 3.1. on data analysis.)

- Second, having the case study report reviewed by key informants also helped in reducing the likelihood of bias\textsuperscript{10}. (Sections 3.3.1. and 3.3.2. discuss this review process and its benefits for construct validity and internal validity.)

- Third, the fact that the present case study discloses the name of the case-study company provides ample opportunity for future double-checking of the findings and conclusions, thereby inviting criticism. Finally, such double-checking is facilitated by the provision of the evidence and procedures followed in conducting the case study (these procedures are provided in the appendices).

3. Research procedures

The research procedures describe how the study was conducted to best answer the research objective and questions. This section describes the techniques employed for data collection and analysis, and specifically discusses the measures taken to maximize the validity and reliability of the research findings.

3.1. Data collection

Methodology scholars agree that the case study methodology’s unique strength is its ability to deal with a wide range of data sources (Yin, 1994: 84; Eisenhardt, 1989: 533). This dissertation uses data collected from four sources: interviews, direct and participant observation, and documents/archival records. The majority of data came from formal interviews. To corroborate interview data, archival data as well as observations were used. The majority of data from these sources was collected from November 26, 2001 to March 1, 2002. The four sources of data used in this study yielded 611 legal-size pages of typewritten transcripts and summaries (these can be obtained from the researcher for purposes of academic research, given that a confidentiality agreement has been signed with the Siemens corporation). The specifics of each data-gathering technique are subsequently described.

\textsuperscript{10} According to Yin (1994: 65), key informants are particularly critical interviewees in that they provide access to further data, whether in the form of brokering contacts with other interviewees, or archival material.
3.1.1. Interviews

A consensus in the literature emphasizes qualitative interviews as the single-most important data-collection technique in the social sciences (see, e.g. Foddy, 1993, Rubin and Rubin, 1995; Denzin and Lincoln, 1994; Yin, 1994: 88). In line, the majority of the data used in this dissertation came from interviews. Siemens managers from different levels in the organization, different functional groups, and different businesses, who had been involved in the three key projects investigated, were formally interviewed. All in all, 40 Siemens managers, and one external consultant who had in-depth knowledge of the company (Thomas H. Davenport) were formally interviewed. Many of the managers previously interviewed were contacted again to clarify differences and discrepancies in the interview accounts. Thus, many managers were interviewed repeatedly, amounting to 51 interviews, and yielding a total of 344 typewritten, legal-size pages of interview summaries. The researcher conducted most of the formal interviews himself (35 interviews). In addition to this, particularly in the case where interviewees were board members, usage was made of existing interview data from the Financial Times, The Wall Street Journal, and a bi-monthly Siemens internal publication, in order to facilitate data access (16 interviews). An overview of the interview partners, their affiliation and the number of interviews conducted with each interviewee is provided in Table 6.

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11 Some top managers who had previously left the company were included as well.
Table 6: Distribution of persons interviewed by job title and affiliation in the Siemens company (source: author).

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Affiliation</th>
<th>Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Former head of Top Plus Program</td>
<td>Corporate Top Plus Project</td>
<td>1</td>
</tr>
<tr>
<td>2. Head Top Plus Program Best Practice Sharing</td>
<td>Corporate Knowledge Management</td>
<td>1</td>
</tr>
<tr>
<td>3. Member of the Board</td>
<td>With special responsibility for Transportation Systems</td>
<td>2</td>
</tr>
<tr>
<td>4. Head of Top Plus Program</td>
<td>Corporate Top Plus Project</td>
<td>2</td>
</tr>
<tr>
<td>5. Knowledge Manager</td>
<td>Information and Communications Sales Germany</td>
<td>1</td>
</tr>
<tr>
<td>6. Head of Cooperation Strategies</td>
<td>Corporate Development Department</td>
<td>2</td>
</tr>
<tr>
<td>7. Chief Corporate Strategy Officer</td>
<td>Corporate Development Department</td>
<td>1</td>
</tr>
<tr>
<td>8. Head of Business Communication</td>
<td>Information and Communications Networks, Sales Germany</td>
<td>1</td>
</tr>
<tr>
<td>9. Member of the Board</td>
<td>With special responsibility for Human Resource Management</td>
<td>1</td>
</tr>
<tr>
<td>10. Member of the Board</td>
<td>With special responsibility for E-Business and the European Union</td>
<td>2</td>
</tr>
<tr>
<td>11. Program Manager Strategy Development</td>
<td>Information Communication Networks</td>
<td>1</td>
</tr>
<tr>
<td>12. Head of Competitive Intelligence</td>
<td>Information Communication Networks</td>
<td>1</td>
</tr>
<tr>
<td>13. Head of Strategic Marketing Department</td>
<td>Corporate Development</td>
<td>1</td>
</tr>
<tr>
<td>14. Former Head of Information and Communications Networks Sales Germany (now retired)</td>
<td>Information and Communications Sales Germany</td>
<td>2</td>
</tr>
<tr>
<td>15. Vice President</td>
<td>Corporate Technology Department</td>
<td>1</td>
</tr>
<tr>
<td>16. CEO and Chairman of the Board</td>
<td>Siemens AG</td>
<td>1</td>
</tr>
<tr>
<td>17. Former Head of Business Communication</td>
<td>Information and Communications Networks, Sales Germany</td>
<td>1</td>
</tr>
<tr>
<td>18. Former Member of the Board (now retired)</td>
<td>With special responsibility for Asia</td>
<td>1</td>
</tr>
<tr>
<td>19. Member of the Board</td>
<td>With special responsibility for Top Plus Program</td>
<td>1</td>
</tr>
<tr>
<td>20. Head of Service Management</td>
<td>Transportation Systems</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 6: Distribution of persons interviewed by job title and affiliation in the Siemens company (continued).

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Affiliation</th>
<th>Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. In-house consultant</td>
<td>Information and Communications Networks, Sales Germany.</td>
<td>1</td>
</tr>
<tr>
<td>22. Vice President</td>
<td>Information and Communications Executive Office</td>
<td>1</td>
</tr>
<tr>
<td>23. Head of Service Management Project</td>
<td>Corporate Project World Class Services</td>
<td>1</td>
</tr>
<tr>
<td>24. Head of Business Communication</td>
<td>Information and Communications Networks</td>
<td>1</td>
</tr>
<tr>
<td>25. CEO</td>
<td>Osram Lighting Devices</td>
<td>1</td>
</tr>
<tr>
<td>26. Head of Knowledge Management</td>
<td>Information and Communications Networks, Sales Germany.</td>
<td>2</td>
</tr>
<tr>
<td>27. Head of Institute for Organizational Change</td>
<td>Accenture, Boston, USA</td>
<td>1</td>
</tr>
<tr>
<td>28. Knowledge Manager</td>
<td>Information and Communications Sales Germany</td>
<td>1</td>
</tr>
<tr>
<td>29. In-house Analyst</td>
<td>Corporate Development Department</td>
<td>1</td>
</tr>
<tr>
<td>30. In-house consultant</td>
<td>Information and Communications Networks, Sales Germany</td>
<td>1</td>
</tr>
<tr>
<td>31. Strategic Marketing Officer</td>
<td>Corporate Technology</td>
<td>1</td>
</tr>
<tr>
<td>32. CEO</td>
<td>Information and Communications Networks</td>
<td>2</td>
</tr>
<tr>
<td>33. Head Quality Management</td>
<td>Transportation Systems</td>
<td>2</td>
</tr>
<tr>
<td>34. CEO</td>
<td>Building Technologies</td>
<td>1</td>
</tr>
<tr>
<td>35. Head of Top Plus Project</td>
<td>Medical Solutions</td>
<td>2</td>
</tr>
<tr>
<td>36. Head of Corporate Knowledge Strategy</td>
<td>Corporate Knowledge Management</td>
<td>1</td>
</tr>
<tr>
<td>37. Knowledge Manager Service</td>
<td>Information and Communications Networks, Sales Germany</td>
<td>1</td>
</tr>
<tr>
<td>38. CEO</td>
<td>Information and Communications</td>
<td>1</td>
</tr>
<tr>
<td>39. Head Corporate Business Accelerator</td>
<td>E-Business Department</td>
<td>1</td>
</tr>
<tr>
<td>40. Chief Knowledge Officer</td>
<td>Corporate Knowledge Management</td>
<td>2</td>
</tr>
<tr>
<td>41. Knowledge Manager</td>
<td>Information and Communications Sales Germany</td>
<td>1</td>
</tr>
</tbody>
</table>

**OVERALL**  \( \Sigma 51 \)
The selection process for the interviewees in Table 6 was straightforward: when the agreement to collaborate in the research was granted, initial discussions led to the most important individuals involved in the key projects being investigated (in the literature, this approach is sometimes called ‘snow-ball sampling,’ e.g. Denzin and Lincoln, 1994). In line with the definition of key concepts (section 3.2.2. in chapter 1), top managers, middle managers, and line managers were interviewed. Thus, the researcher sought to identify three types of participants: senior managers who were directly involved in key projects investigated (e.g. the head of the umbrella project investigated, namely the Top Plus Program, as well as the head of corporate strategy at Siemens), middle managers who played a key role (e.g. the division managers), and ‘front line’ managers (e.g. development team leaders of the Top Plus Program).

Moreover, the researcher specifically sought to interview managers with substantial first-hand experience with the key projects investigated (the Top Plus Program, the Ten Point Program and Operation 2003). As the interviewing process proceeded, the researcher asked interviewees whom else he should interview. This widened the number of interviews considerably, and the researcher only stopped interviewing when he found the names of persons already interviewed as strong suggestions for further interviews. In addition to this, many of the managers previously interviewed were contacted again to clarify emerging differences and discrepancies in the interview accounts. Moreover, existing interviews, available from internal publications or the business press, were used to corroborate own interview data. This was done particularly in the case of interviews with board members, where it was difficult to gain an appointment for an interview. Finally, throughout the interviewing process, informal discussions with Siemens employees were used to corroborate data obtained from the formal interviews.

The formal interviews lasted between 20 minutes and 190 minutes, with most lasting for 60 minutes. Interviews with a ‘new’ interviewee were semi-structured (an outline of the interview guide is given in the appendix). Follow-up interviews were structured, for clarification about key events, people and issues identified. A major benefit arising from this approach is that it was possible to interview more people than originally planned, since respondents often mentioned names of relevant actors and were willing to help set up an interview with them. It was thus possible to interview the relevant actors in each unit of analysis and to record the convergence and divergence in their views on various key problems and critical situations throughout
the project studied for this dissertation (the units of analysis were three strategy-making projects, called Top Plus Program, Ten Point Program, and Operation 2003 that were ongoing at the time of the field study). (Section 4.3. in the present chapter discusses the units of analysis in greater depth.) Over time, in line with the constant comparative method (Glaser and Strauss, 1967; Strauss and Corbin, 1990), the interview outline was adjusted to help the researcher refine the theoretical perspective being generated and to confirm that he was assessing level-specific logics of action, rather than simply recording believes and attitudes of the individual interviewed (Doz, 1996). Thus, unless stated otherwise, only those experiences that were described similarly by at least two interviewees are recorded in the final dissertation.

In all interviews, extensive use was made of archival data to prepare the interview, to challenge interviewees’ memories and to check their perceptions of the key projects investigated. This helped the researcher contain the difficulties associated with possible interviewees’ selective retrospective biases and also helped to recreate the managers’ ‘temporal and contextual frame of reference,’ which is considered essential for good quality case study research on strategy making (e.g. van de Ven, 1992). Thus, the focus of each interview was on the individual’s own factual experience with the key projects investigated, the evolution of their involvement, and their understandings of and commitments to these projects. The researcher’s emphasis was to comprehend the events within and around the three key projects (the Top Plus Program, the Ten Point Program, and Operation 2003) as fully as he could. The researcher’s focus included both a general understanding of the decisions, perceptions and approaches and a specific identification of how these were perceived. In line with other real-time studies of strategy making (e.g. Doz, 1996; Burgelman, 1994), great care was taken not to influence the ongoing process and still try to maintain a legitimate presence in the field insofar as managers would be tempted to quickly seek advice from the researcher and ask the researcher to intervene in the project as a quid pro quo for allowing further observations.

To ensure validity and reliability of the interview data, all except one interview (which was a business lunch with the head of corporate strategy) were tape-recorded. Furthermore, reflective summaries were used in strategic places during the

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12 An interesting new technique for conducting the interviews emerged during the first few: it transpired that once the tape-recorder was switched off, the interviewees tended to relax, and provided more interesting data than when they were being recorded. To take advantage of this tendency, the ‘switch-off effect’ gradually became a very powerful tool for eliciting high quality data. The researcher thus learned to use the switch-off
interviews. In the reflective summaries, the researcher produced a short verbal wrap-up of what he understood as the main line of argument, in order to check for misunderstandings (see also Orgland, 1995: 200–201). This technique was much appreciated by the interviewees, as it was seen as ‘active listening’ by the researcher. The present dissertation has taken the notion of active listening one step further. Within 24 hours of completing an interview, the researcher made a typewritten summary of the conversation. These interview summaries were sent to the interviewees to peruse within three working days as a way to further ensure validity and reliability of the data (see also Orgland, 1995; Burgelman, 1994; section 3.3. in the present chapter provides a full discussion of the validity and reliability measures used in this dissertation)\(^{13}\). The response rate for the interview summaries was 100% (the covering letter is provided in the appendix).

### 3.1.2. Direct observation

Stake characterized qualitative case study work as the researcher spending substantial time on site, being personally in contact with the activities and operations, and as reflecting, and revisiting the meanings of that which is occurring (Stake, 1995: 242). Observational techniques, whether participant observation (next section), or direct observation (this section) are common approaches to this end. Direct observation is widely appreciated in the literature as a worthwhile source of data for case studies (see, e.g. Yin, 1994: 91–92; Denzin and Lincoln, 1994: 203). For example, Foddy (1994: 3) noted that the relationship between what interviewees say they do and what they actually do, is not always very strong. Pettigrew (1990: 277) and Lovas and Goshal (2000) have observed the same tendency in their studies. This suggests direct observation as a convenient method for checking interview data. This approach can be instrumental in improving construct validity as will be described further down (section 3.3.1).

In this dissertation, a new feature of the case study is that it made extensive use of video-recorded internal presentations as well as presentations given at the annual shareholders’ meetings and business conferences. These videos provided an excellent button strategically during the interviews. To ensure confidentiality in this process, the interviewees reviewed all transcripts before they were utilized for the case study.

\(^{13}\) Both the interview tapes as well as Microsoft Word revision mode versions of the summaries of the interviews before and after they were sent to the interviewees for appraisal, are available from the researcher for the purpose of scientific study, provided that a confidentiality agreement has been signed with the Siemens company.
opportunity to corroborate interview and other data. In addition to this, videos used as a data source ensure the reliability of the research findings: given that somebody interested in following up the research of this dissertation has signed a confidentiality agreement with the Siemens corporation, he or she could ascertain the accuracy of the direct observations cited in this dissertation. Thus, to ensure reliability of the data and conclusions, only direct observations that were videotaped are cited in this dissertation. A total of 11 direct observations were made. The details of these events are given in the list of Siemens references, which is provided in the appendix.

3.1.3. Participant observation

Participant observation is a special mode of observation in which the researcher is not simply a passive observer as in direct observation, but is actually involved in the events being studied (Yin, 1994: 92). Participant observation has been noted to involve major trade-offs between the opportunities this data collection method provides, and the problems it poses (Yin, 1994: 94). Important opportunities include access to events or groups otherwise inaccessible to scientific investigation (Lovas and Goshal, 2000: 877). In the present study the fact that the researcher was employed by Siemens for three years, greatly enhanced his ability to actually view the object of study from the ‘inside,’ thereby gaining access to data only insiders would be able to access. For example, interviewees were willing to respond to certain questions and start a discussion with the researcher, simply because he was a Siemens ‘insider.’ On the other hand, it is precisely this ‘intimacy’ of the participant observer with the object studied that potentially distorts the data by introducing bias (see also 2.2.3 on researcher bias).

The researcher rigorously followed Yin’s advice to carefully balance the tradeoffs involved in participant observation (Yin, 1994: 41 – 43, 94). To illustrate: great care was taken to ensure the construct and internal validity, and to minimize researcher bias through the use of techniques such as data triangulation and several sources of evidence for the purpose of achieving convergent validity (see section 3.3.2 on Internal validity). Probst (2000: 252) has furthermore noted the value of devil’s advocacy in the process of case study research. At times the researcher deliberately adopted the devil’s advocate position by subtly challenging the consensus during meetings and get-togethers. This technique was found to be very useful in maintaining and reinforcing his status as an external observer. It was also much appreciated by the researcher’s colleagues who found that this challenging of their ideas greatly
enhanced their thinking. Overall it was found that the opportunities presented by participant observation outweighed the problems mentioned in the literature by far, possibly because great care was taken to eliminate a potential bias as far as possible. A list of the participant observations made is provided in the appendix.

3.1.4. Documents/archival records

Documents and archival records were the fourth source of evidence consulted. Document and archival records consulted included the corporate library, the public relations department and the corporate communication department. The documents and archival records that were eventually used in the present dissertation are all contained in the case study database that amounts to a total of 13 lever-arch files. The data includes documents such as official company press releases, internal communication such as company magazines, speeches and presentations by Siemens executives, and internal training material. To gain the maximum value from these sources, great care was taken to follow Yin’s advice to consult documents and archival records as a ‘vicarious observer,’ so as not to accept documents as if they contained the “unmitigated truth” (Yin, 1994: 87). In the present Siemens case study, documents were therefore used in conjunction with other sources of information, such as interviews and observations of the researcher. Only when all of the evidence produced a consistent picture, was it assumed that an event had occurred in a certain manner.

To summarize the data collection approach of this dissertation, the number of interviews eventually conducted (51), as well as the volume of transcription pages (611) compares favorably with the literature (see, e.g. Stake, 1995; Pettigrew, 1990; Dyer and Noboeka, 2000; Lovas and Goshal, 2000). As a whole it is hoped that the researcher’s data-gathering techniques have made it possible to obtain the kind of overview and in-depth picture of the interviewee’s view of the three key projects investigated (the Top Plus Program, the Ten Point Program, and Operation 2003) that should characterize a well-grounded case study (see Lincoln and Guba, 1985; Eisenhardt, 1989).

3.2. Data Analysis

Analyzing case-study evidence constitutes one of the least developed and most difficult aspects of doing case studies (Yin, 1994: 105; Stake, 1995: 242; Huberman
Empirical Study

and Miles, 1994: 429). Few concrete recommendations that provided conceptual frameworks for analyzing case-study evidence could be found in the literature (exceptions include Miles and Huberman, 1984, Huberman and Miles, 1994; Yin, 1994). In addition to this, there seems to be considerable debate among scholars regarding the appropriate analytic technique (e.g. the debate between Yin, 1981 and Miles, 1979).

The most commonly used analytic approach for case studies appears to be Yin’s (Yin, 1994). According to Yin, the best preparation for conducting case study analysis is to have a general analytic strategy, and, within the realm of this wider analytic strategy, to define a specific analytic technique (Yin, 1994: 109). The choice of general analytic strategy depends on the type of case study at hand. For explanatory case studies such as the present one, reliance on theoretical propositions is recommended. In relying on the theoretical propositions that led to the case study, the original objectives and design of the study, its research questions, and the review of the literature, attention can be focussed on certain data, thereby ignoring other data (Yin, 1994: 106). The case study analysis in this study closely followed Yin’s suggestions and used the theoretical framework, which was based on an extensive review of existing work in the strategy process and content realms, to guide analysis. This technique greatly assisted the researcher in reducing the data in purposeful ways, i.e. in line with the original research objectives and questions. It furthermore guarded the researcher from getting sidetracked in areas that, while interesting, were only remotely related to the purpose of the study.

Within the general analytic strategy, the specific analytic technique used was explanation building. Explanation building was chosen because it constitutes the single most appropriate analytic technique for explanatory case studies, such as the present Siemens case study (Yin, 1994: 113). The purpose of explanation building is to compare an empirically-based pattern with a predicted one. Based on this comparison, explanations can then be built to illustrate why patterns coincide or why not. If done rigorously, explanation building can improve internal or logical validity (section 3.3.2 provides a full discussion of internal validity). Explanations can be built by first rendering an accurate description of the facts of the case study, by subsequently considering relevant alternative explanations of these facts, and by finally drawing a conclusion based on the single explanation that seems most congruent with the facts (Yin, 1981: 61). Yin maintains that there are no fixed recipes for building or
crafting strategy imaginatively

Comparing explanations (1981: 61, 1994: 114). However, an important characteristic of rigorous application of this approach is that the final explanation of the case is the result of a series of iterations. In the present study, the case evidence was examined, theoretical propositions were revised, and the evidence was once again examined from a new perspective in an iterative mode. To illustrate: data from the four sources used in this dissertation (interviews, data from direct and participant observation, and archival data) were compared, and additional interviews were added until the same information was repeated again and again, suggesting that analysis had reached what Glaser and Strauss referred to as theoretical saturation (Glaser and Strauss, 1967, cited in Burgelman, 1994: 483).

3.3. Quality measures of the research design

A review of the literature reveals that questions of validity, reliability, and objectivity are a contentious issue in the qualitative paradigm of field research (Denzin, and Lincoln, 1994; Miles and Huberman, 1994). The basic tenet is that the traditional quality measures, emanating from the positivist; quantitative paradigm cannot simply be translated to the interpretative, qualitative paradigm. This logic often serves to refute quality measures in the qualitative paradigm (see e.g. Reason and Rowan, 1981 for a radical argument). This dissertation, however, takes a different stance. Given the dissertation’s scientific approach (section 3.1. in chapter 1), it is believed that in the qualitative paradigm not everything is mindlessly acceptable. In fact, it would appear that the lack of established procedures and commonly agreed conventions that seem characteristic of the qualitative paradigm, make it even more difficult to ensure rigorous research. Four measures are most commonly applied to ensure the quality of research, and are therefore adopted for the present dissertation (Stake, 1994; Cook and Campbell, 1976; Scandura and Williams, 2000; Larsson, 1993).
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The four measures for ensuring validity and reliability are:

- construct, or concept validity (the degree to which a study investigates what it claims to investigate),
- internal, or logical validity (the degree to which findings correctly map the phenomenon in question),
- external validity, or generalizability (the extent to which findings can be reproduced in another setting), and
- reliability (the degree to which the study is free of random errors).

3.3.1. **Construct (or concept) validity**

In the literature, construct or concept validity relates to research procedures, and applies to the data collection period. The construct validity of a procedure denotes the quality of the conceptualization or operationalization of the relevant concept (Smaling, 1992). In essence, construct validity refers to the extent to which a study investigates what it claims to investigate, i.e. to the extent to which a procedure leads to an accurate observation of reality (Denzin and Lincoln, 1994; also Ansoff, 1987, 1991). Skepticism regarding the case-study method often suggests that case-study investigators fail to develop a sufficiently operational set of measures and that ‘subjective’ judgements are used (Yin, 1994: 41). In this regard, several case study researchers have been concerned with establishing ways in which construct validity can be ensured (see Denzin and Lincoln, 1994; Stake, 1995; Yin, 1994). Three approaches to improve construct validity crystallized from these efforts, and were adopted to ensure the construct validity of this dissertation: the use of multiple sources of evidence, the establishment of a clear chain of evidence and, most importantly, triangulation.

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14 The interrelationship of validity and reliability is worth noting in this context. The conjecture in the literature is that just because an observation or a conclusion is reliable, this does not mean that it is also equally valid. To illustrate: say the watch of Frederic Taylor was 7 seconds slow. Whenever Taylor used this watch to determine the speed of production processes, it would underestimate the time by 7 seconds. In short, Taylor’s watch provided an invalid indication of time needed to produce a certain product (i.e. its measurement would have been characterized by nonrandom error). However, this nonrandom error would not have affected its reliability, since it would systematically underestimate the time required by 7 seconds every time a measurement was made, thereby not leading to inconsistent results in repeated measurements (i.e. its measurement is characterized by the absence of random error). In short, Taylor’s watch would have provided a perfectly reliable, but invalid representation of time. Overall, for any conclusions in case study research to be scientifically useful, they must be based on a measurement process that is relatively reliable and valid. The researcher thanks Prof. Winfried Ruigrok for the fruitful discussions along those lines.
The use of multiple sources of evidence has already been expressed as a key strength of the case-study method, since it can ensure construct validity. The opportunity to ensure construct validity constituted an important rationale in preferring the case-study method above other research strategies for this dissertation (see section 2.1.1 Rationale for adopting the overall case study method). Unlike other research strategies, the case-study method allows a multitude of sources of evidence, which can all be integrated into the final case study report (Yin, 1994, Stake, 1995). Multiple sources of evidence can provide various explanations for the same phenomenon, thereby allowing the researcher to cross check information. The present study has made ample use of this opportunity and has drawn from four sources of evidence: archival records, interviews, direct observation, and participant observation (as was section 3.1 of the present chapter). In order to demonstrate how these sources of evidence lead to converging lines of inquiry, and how the researcher arrived at his conclusions following a corroboratory mode, the data collected were thoroughly referenced in the case study database and protocol as well as in the final report.

The establishment of a clear chain of evidence is a second approach to improve construct validity. The principle is to allow an external observer to follow the derivation of any evidence from the initial research questions to the final case study conclusions (Yin, 1994: 102). According to Yin, four measures can be taken to ensure that a clear chain of evidence was followed. First, the report should make extensive citation of the relevant propositions of the case study database. Second, the actual circumstances under which the case study data were collected, e.g. in terms of time and place of the interview, should be clearly indicated. Thirdly, these circumstances should be consistent with the specific procedures and questions stipulated in the case-study protocol. Fourthly, the protocol should indicate the link between the protocol on the one side and the initial study questions on the other side (Yin, 1994: 102). In line with Yin’s suggestions, four measures were taken to ensure that a clear chain of evidence was followed. In the present dissertation, all data sources were thoroughly referenced in the final report, and all referenced data are cataloged in the case-study database. Furthermore, the case-study database clearly indicates the circumstances under which the individual interviews were conducted (provided in the appendices). Ultimately this dissertation also presents the research questions and data collection procedures in the case-study protocol (this was discussed in the research objective in chapter 1, and research procedures in section 3.1; and also in the sections outlining the implications for the empirical study at the end of chapter 2).
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Triangulation as a third tactic to ensure construct validity is widely recommended in the literature (see, e.g. Yin, 1994; Denzin and Lincoln, 1994; Stake, 1995; Pettigrew, 1990). The term triangulation originally denotes the surveying of land using trigonometry (Smaling, 1992: 88), and is used in social science research to study the object of research in at least two ways. The basic principle of triangulation can be applied to method triangulation (e.g. when quantitative and qualitative methods are combined to study the same object), researcher triangulation (e.g. when two or more researchers are involved in the study), but the most widely used application of triangulation seems to be data triangulation (Smaling, 1992; Denzin, 1989; and Lincoln, 1994). Data triangulation is related to the usage of multiple sources of evidence described above, but transcends it in that the objective is to actually validate the data collected by correcting errors of fact (see, e.g. Yin, 1994: 143 – 145). The usual approach thereto is to have key informants and peers review the draft of the case study. Orgland (1995: 200-201) has highlighted the benefits of not only having the final case-study draft reviewed, but to also have all interview transcripts reviewed by the interviewees. It is important to note that the objective of using these reviews is not to have reviewers correct the conclusions drawn, but to validate the actual facts of the case study (Yin, 1994: 144). The corrections made in the process benefit the construct validity of the study in at least two ways. First, the likelihood of reporting false, or commercially sensitive data is minimized. Second, in situations where no objective truth may exist, triangulation can be instrumental in portraying the different perspectives and viewpoints, which can then be presented in the case study report.

Such data triangulation is therefore likely to serve as a source for nonreactive data of changes in practice or performance (Denzin and Lincoln, 1994; Smaling, 1992). Nonreactive data are historical, archival data, which are not influenced by the perceptions or biases of the individuals providing or gathering the data (Denzin and Lincoln, 1994; Glaser and Strauss, 1967). Therefore, wherever possible, interview data were corroborated with archival data. In the literature, this process is also called constant comparative method,\(^{15}\) and is widely used as an internal check for the validity of the data. Glaser and Strauss describe the process of the constant comparative method as follows:

\(^{15}\) This approach should not be confused with the so-called comparative method of early sociology that used, often selectively, cross-sectional data to support a priori theories (e.g. Nisbet, 1969, cited in Burgelman, 1983: 224). This theory was not used for purposes of the present research.
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“As the research proceeds and new data are collected, they are constantly being compared to prior data in terms of categories and hypotheses. When new data yield new or inconsistent information, conceptual categories and the emerging theory are modified to take them into account. This process is repeated until theoretical saturation is reached: until no new categories are emerging and no new information inconsistent with the categories and tentative hypotheses is being generated” (Glaser and Strauss, 1967; Strauss and Corbin 1990, cited in Dyer and Nobeoka, 2000: 351).

In this dissertation, discrepancies between interview data and archival data discovered in the course of the research raised questions that guided further data collection and analysis. For example, in the first stages of the data collection, the interviews helped to gradually develop an understanding of how Siemens was crafting strategy. At later stages, little new information was obtained and the interviews gradually became a way of ascertaining the validity of the conclusions of the strategy-making matrix. Data collection was concluded when theoretical saturation was reached (Glaser and Strauss, 1967, Dyer and Nobeoka, 2000).

3.3.2. Internal (or logical) validity

Logical validity, also commonly called ‘internal validity’ (e.g. by Smaling, 1992; Yin, 1994), relates mainly to research results. It is a question of whether the reasoning, the ‘logic’ of the research framework provides arguments that are powerful and compelling enough to defend the research conclusions. Essentially the concern with establishing internal validity is one of establishing causal relationships, whereby certain conditions are shown to lead to specific outcomes, as distinguished from spurious relationships (Yin, 1994: 40). In contrast to construct validity, which mainly applies to the data collection phase of a study (as discussed above), internal validity applies to the data analysis phase (Yin, 1994: 105). The most powerful form of argumentation for ensuring internal validity would be a truly experimental research framework that has the capacity to clearly demonstrate that variable x leads to variable y, and that y was not caused spuriously by a third variable z. The non-experimental nature of the type of case study used for the purpose of this dissertation makes establishing causality exceedingly difficult (Yin, 1994: 105; Stake, 1995: 242). Indeed, some types of case studies may not involve concerns with internal validity at all. These include descriptive, or explanatory, case studies, which do not attempt to make causal statements (Yin, 1994: 43). However, for explanatory case studies, such as the present...
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one, internal validity is applicable. Two tactics are commonly used to ensure internal validity in explanatory case studies (see, e.g. Denzin and Lincoln, 1994; Yin, 1994): pattern matching, and convergent validity.

Pattern matching has been emphasized as the most opportune strategy for ensuring internal validity of explanatory case studies. Pattern matching compares an empirically-based framework with a predicted one. If the patterns coincide, or match, the results strengthen internal validity (Yin, 1994: 109). Pattern matching can be particularly powerful if patterns coincide across previous studies (Eisenhardt, 1989). This form of pattern matching has also been referred to as convergent validity (Denzin and Lincoln, 1994) to denote that the validity of findings can be greatly enhanced if they can be shown to be consistent with similar findings in other contexts. Pattern matching and convergent validity as a strategy for ensuring internal validity, are widely used throughout this case study. To illustrate: in validating the strategy-making framework, the author of this dissertation consistently compared predicted patterns (i.e. the patterns based on an extensive review of previous work in the theoretical part) with empirically-based patterns (i.e. the results of the empirical study in this chapter).

In order to make the pattern-matching approach crystal clear to the reader, the case-study evidence in this dissertation is systematically (a) presented as it applies to each element of the theoretical framework (i.e. to each imagination lever). This presentation of evidence is (b) followed by a concise discussion of the findings, comparing the empirical evidence with the theory. In comparing predicted theoretical patterns with empirically based ones, it was also ensured that rival or contrary evidence and thinking were accommodated in the data analysis phase. Yin is adamant that rival positions be explicitly included in the research for the purpose of reducing bias:

“Many times, I have been asked how to assure that a case study can avoid bias, whether in its initial formulation, its data collection, its data analysis, or even its reporting. In every instance, my answer has always been to encourage rival thinking that is serious, open and fair” (Yin, 1994: 112).

In line with Yin, an important aspect in the analysis of the case-study evidence was therefore the explicit consideration of other plausible or rival explanations. Following Yin’s admonition, these are provided throughout the empirical part, and in particular in the concise discussions that compare empirical evidence with theory.
3.3.3. External validity (or generalizability)

Theory development crucially depends on the generalizability of the findings (see, e.g. Sutton and Straw, 1995; Weick, 1995). Generalizability, in turn, depends on the type of case study being chosen (Yin, 1994; Stake, 1995). The type of study chosen for the present dissertation is the single-embedded case study. However, case studies in general, and the single-embedded case study in particular, make generalizability of the empirical findings difficult. Yin, for instance, warns his readers that case studies in general do not allow for statistical generalization, i.e. the making of inferences about a population on the basis of empirical data collected about a sample (Yin, 1994: 38 - 40). Some authors have even argued that case studies constitute a unit of analysis in themselves, rather than a sampling unit, and hence do not allow for statistical generalization (Stake, 1988, 1995).

Lack of generalizability has led to criticism of the single-embedded case study. In this stream of inquiry, researchers have commented that the study of the single-embedded case is not as important as the study to obtain generalizations pertaining to a population of cases (Denzin, 1989; Herriott and Firestone, 1983; Yin, 1994). In recognition of the importance of and problems associated with generalizability, the single-embedded case study has been described as a “small step toward grand generalization” (Campbell, 1985, cited in Stake, 1995: 238). In this strand of thought it is argued that generalization cannot, and in fact, should not, be accomplished in all research, since incorrect conclusions could be drawn when the commitment to generalization runs so strongly that the researcher’s attention is drawn from features important for the understanding of the case itself (Simons, 1980; Stake, 1995; also Mintzberg, 1979). Stake has argued that it is precisely the epistemology of the particular, i.e. attention to features important for understanding the case itself that allows for an understanding of a general phenomenon underlying the case under investigation:

“On representational grounds, the epistemological opportunity seems small, but we are optimistic that we can learn important things from almost any case. Potential for learning is a different and sometimes superior criterion to representativeness” (Stake, 1995: 243).

The endeavor to foster understanding of a general phenomenon on the grounds of a single case is also evident in the use of case studies for teaching purposes (Eisner,
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1985; Probst, 2000). However, generalizability of the empirical findings in single-embedded case studies remains elusive, even though an understanding beyond the case studied may be fostered (Yin, 1994). Thus the empirical research findings reported in this dissertation could be idiosyncratic to the case researched, i.e. the Siemens company.

3.3.4. Reliability

Reliability refers to the extent to which later researchers can arrive at the same insights as previous researchers, if the former were to conduct the same study all over again (Smaling, 1992; Denzin and Lincoln, 1994). Reliability is often used as a methodological requirement for the results of the research study, such as collected data, interim findings, and final conclusions (see, e.g. Denzin and Lincoln, 1994; Yin, 1994; and especially Smaling, 1992). In the present study, reliability is seen as a methodological requirement for the results of the study, rather than for the research procedure, i.e. the case study method, since the reliability of the case study method as such has been widely established in the social science and business literature (Stake, 1995; Yin, 1994).

When applied to the research findings, reliability of a study demands the absence of random errors (Smaling, 1992: 79; Yin, 1994: 45). According to Yin, the objective is to ensure that the results of a given study can be achieved a second time, when the original methods and procedures are followed closely (Yin, 1994: 45). To ensure reliability of research findings, it is often suggested that research procedures be documented as closely as possible in order to make the process by which the results were found as transparent and replicable as possible (Smaling, 1992). This requirement becomes even more imperative in qualitative studies where procedures are often emergent, rather than planned (Denzin and Lincoln, 1994). Several measures to ensure the reliability of the empirical results of a qualitative research study can be found in the literature (see, e.g. Denzin and Lincoln, 1994). For case studies, the most widely used approach to ensure reliability is that of Yin (1994). According to this researcher, reliability can be approached in conducting the research “as if someone were always looking over your shoulder” (Yin, 1994: 45; cited in Orgland, 1995: 203). The problem of reliability in case studies then becomes a function of documentation. In other words, reliability can be ensured through meticulous documentation and elucidation of the research procedures taken. One way to do this is through a case-
study protocol. The case-study protocol can be complemented by a case-study database (Yin, 1994).

The case-study protocol is the most important approach to ensure reliability (Yin, 1994: 45, 67 – 76). The case-study protocol of this study comprises an overview of the case study project (in terms of the project objectives, as well as temporal and contextual boundaries). Furthermore, the strategy-making matrix is based on an extensive literature review (the theoretical part). In addition to this, the field procedures are elaborated (including the correspondence between Siemens and the researcher, the relationships and contacts of the researcher’s network within Siemens). Another approach taken in this study to improve reliability is explication of the procedures for conducting interviews, and the double-checking of all interview summaries within 3 working days (as described in section 3.1., data collection). Finally, the time schedule of the interviews is given along with the constraints and limitations that need to be kept in mind if the study were to be repeated (provided in the appendix).

The compilation of a case-study database further ensures the reliability of a given study (Yin, 1994: 45; 98 – 102). In the present dissertation, an extensive case-study database was compiled and future researchers are welcome to access this database for further study, if a confidentiality agreement has been obtained from the Siemens corporation. The database comprises 13 lever-arch files and includes the case-study notes, the case-study documents (literature reviewed, Siemens archival documents, and company reports; the interviewing summaries, and observations and finally, the narratives collected during the study). Each of these constituents of the case-study database is organized in such a way as to facilitate retrieval for future investigators.

As a whole, it is hoped that the application of the four quality measures (construct validity, internal validity, generalizability and reliability) in the data collection and data analysis phases of the field study has made it possible to obtain theoretically-grounded and empirically-based research results that characterize high quality case studies. Table 7 summarizes the four quality measures adopted in this dissertation as well as the strategies taken to ensure quality assurance.
Table 7: Strategies taken to ensure the quality of the present case study (source: author).

<table>
<thead>
<tr>
<th>Quality Measure</th>
<th>Definition</th>
<th>Strategy for Quality Assurance</th>
</tr>
</thead>
</table>
| **Construct validity** | • It denotes the quality of the conceptualization of the phenomenon under investigation (Smaling, 1992; Denzin and Lincoln, 1994).  
• Establishes the correct operational measures for the concept being studied (Yin, 1994; Stake, 1995). | • Data triangulation:  
  - Thorough referencing concept of data  
  - Review of transcripts and draft by peers  
  - Review of transcripts and draft by informants  
• Clear chain of evidence  
  - Extensive citation  
  - Indication of circumstances under which data have been collected  
  - Check for consistency of circumstances and actual collection procedure  
  - Clear outline of study |
| **Internal validity** | • Assures that the logic of the research framework provides arguments that defend the research conclusions (Cook and Campbell, 1979; Smaling, 1992; Eisenhardt, 1989).  
• Establishes extent to which relationships are causal and not spurious (Yin, 1994; Denzin and Lincoln, 1994; Stake, 1995). | • Employment of clear research framework  
• Pattern matching  
• Theory triangulation |
| **External validity** | • Assures the generalizability of the research findings (Eisenhardt, 1989; Mintzberg, 1979; Wacker, 1998; Sutton and Straw, 1995; Weick, 1995; Yin, 1994). | • Cross-case analysis |
| **Reliability** | • Establishes the absence of random errors (Smaling, 1992; Denzin and Lincoln, 1994; Mintzberg, 1979).  
• Assures the replicability of the research procedures (Yin, 1994). | • Case-study protocol  
• Case-study database |
4. Research findings

After having discussed the research strategy adopted for this dissertation, the analysis can now turn to the empirical case-study evidence.

Several authors emphasized the benefits of structuring the empirical case-study evidence following the theoretical framework (e.g. Yin, 1994: 61, 1993: 4; Eisenhardt, 1989: 534; Orgland, 1995: 205). The strategy-making case study is in line with these literatures: for ease of exposition and to facilitate accessibility and readability, the empirical part is a mirror image of the strategy-making matrix. Throughout the empirical study, and in line with the pattern-matching method (Yin, 1994), the findings are (a) presented, and (b) discussed by comparing them with the individual elements of the theoretical framework. The empirical study concludes by presenting and discussing overall findings as they apply to the framework as a whole. By using this approach, it attempts to answer the three empirical research questions regarding the overall importance of rigorously adhering to a framework in crafting strategy, the relative importance of the three basic thrusts of strategy making and the importance of the sequencing of the three generic steps.

4.1. Company and industry situation at the time of the field study

Before the analysis starts testing the strategy-making matrix, relevant company and industry background information is discussed, the level of analysis in terms of the different business units investigated is defined, and the unit of analysis in terms of the key projects studied is delineated.

The historical company background is very well documented, and can be accessed online (www.siemens.com). The present section, therefore, concentrates on the company and industry situation at the time of the field study. At the relevant time, Siemens’ business portfolio comprised the following business areas:

- Information and Communications (focusing on the communications industry, including wireline and wireless networks and devices as well as business consulting),
- Automation and Control (offering solutions in the field of production and logistics automation),
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- Power (covering a broad array of energy solutions, including power generation, transmission, and distribution from power plant to the consumer),
- Transportation Systems (focusing on automotive electrics, and the rail industry),
- Medical Solutions (providing a broad spectrum of products, solutions, and services for integrated healthcare, such as technologies for diagnoses, and therapies, which minimize patient discomfort), and
- Lighting (specializing in lighting sources and the associated electronic control gear).

The *company and industry situation* at the time of the field study can most succinctly be described by comparing two statements, made exactly 18 months apart, by von Pierer, the CEO and Neubuerger, the CFO of the Siemens corporation.

“Just after we announced our preliminary figures on November 3 [1999], I read a newspaper article titled ‘Siemens: Darling of the stock market.’ It really dawned on me at that moment how times have changed. The former ‘widows’ and orphans’ stock has been transformed into an attractive, fascinating stock that is outperforming Germany’s DAX index. While the German market barometer rose slightly over 25% in our last fiscal year – from October 1, to September 30, 1999 – Siemens’ stock surged over 90%. And this trend has continued in the past few weeks. From October 1, 1998 to November 30, 1999... the DAX rose 44%, while ‘Siemens soared 47%’” (von Pierer, speech, December 2, 1999, emphasis added).

“The party is over! This is true for the capital market bubble, which burst spectacularly as expected. And a number of our important competitors are feeling the hangover. Many companies, in fact, but especially, and naturally, those in the Information and Communications industry. But old economy companies also have to deal with the consequences of the exaggerated equity evaluations. Nor can Siemens escape these effects and their resulting pressures” (Neubuerger, speech, June 21, 2001, emphasis added).

As can be seen from the two quotes above, the company and industry situation at the time of the research was *changing dramatically* from “the most successful year of the company’s recent history” (von Pierer, speech, February 2001), to “numerous
challenges” that necessitated “a firm foundation to lead our company successfully into the future” (Baumann, speech, June 21, 2001). The company started the fiscal year 2001 with great confidence after the excellent fiscal year 2000, expecting a double-digit growth and earnings growth to outpace sales. The reasons were the generally favorable market conditions (Baumann, speech, June 21, 2001) that were mainly due to:

- A flourishing world economy,
- a technology, media, and telecom boom in the US, and
- a weakened Euro.

In the course of the second quarter of 2001, however, “dark clouds gathered over the global economy” (Baumann, speech, June 21, 2001). The most important reasons were (Baumann, speech, June 21, 2001; von Pierer, speech, June 21, 2001):

- The world economy declined in the aftermath of September 11,
- the ‘dot-com euphoria’ subsided,
- the forecasts for the sales of mobile phones were cut by half in less than six months,
- most telecom operators were struggling with considerable financial debt, and
- numerous industries (particularly the automotive industry and the field of information and communications) were drastically cutting their investment activities.

This led to increasingly differentiated developments in the company’s portfolio. In summer 2001, the group’s performance could be divided into three categories (Baumann, speech, June 21, 2001; von Pierer, speech, June 2001; Siemens World, Volume 4, 2001; von Pierer, speech, January 21, 2002):

- First, Automation and Control and Lighting. These business units were sharply affected by the general economic downturn, particularly in the U.S. The difficult situation with automotive customers and the enormous surge in energy costs had negatively impacted the development of this category. Both groups, however, had reached a high level of profitability and demonstrated how a business unit can survive business cycles without deteriorating profits (von Pierer, speech, June 21, 2001).
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- Second, former ‘problem children’ (von Pierer, speech, June 21, 2001) Medical Solutions, Power Generation and Transportation Systems had developed into strong performers following their turnaround. Their turnaround was mainly ascribed to the rigorous application of the so-called Top Plus instruments (the Top Plus instruments will be discussed shortly).

- The third category was comprised of the other eight groups that, at the time of the research, were coping with challenges of varying degrees. This was particularly true for the two large groups in the Information and Communications area. Information and Communications Mobile was in the red due to a dramatic downturn in the mobile phone market. Information and Communications Networks was affected by a shift in technology, namely the separate transmission of voice and data to a convergence of voice and data. In addition, this group was suffering from the weak investment activities of enterprise customers. The third Information and Communications group, Siemens Business Services, traditionally a technology consultant, was focusing on e-business consulting, but its earnings were unsatisfactory (Baumann, speech, June 21, 2001).

In order to arrive at an encompassing picture of Siemens’ approach to strategy making, business units from all three categories were included in the analysis, as will be discussed in the next section.

4.2. Level of analysis: corporate and business unit level

This dissertation looks into the issue of crafting strategy imaginatively in the diversified firm, i.e. a large corporation that is active in various, if related, industries (see Chandler, 1962). This focus suggests two basic levels of analysis: the corporate and the business unit level.

Consistent with the empirical research objective, the main level of analysis was the corporate level, and the main research questions remain at corporate level. To arrive at an encompassing picture of Siemens’ approach to strategy making, the business-unit level was included as a sub-level of analysis. Here, a carefully selected sample of six business units was analyzed (Information and Communications Networks, Information and Communications Mobile, Automation and Control, Transportation
Crafting strategy imaginatively

Systems, Medical Solutions, and Power Generation). Three selection criteria informed this sampling decision:

- First, the wide variety of industries covered by Siemens’ business units afforded the researcher the ideal opportunity to choose business units in different industries, so as to ensure the generalizability of the research findings (Yin, 1994:38; Campbell, 1985, cited in Stake 1995: 238).

- Second, the researcher was careful to identify business units that represented ‘extreme cases’ in that their performance was highly differentiated, and even diametrically opposed, so as to ensure the internal validity of the research findings (Campbell, 1985, cited in Yin, 1995: 238; Miles and Huberman, 1984).

- Finally, it must also be appreciated that resource constraints in terms of time and money limited the range of relevant business units.

Table 8 below provides an overview of the sample of business units that, given the three selection criteria, were within the scope of analysis of this dissertation. Table 8 also shows business units that were outside the scope of analysis.
Table 8: Levels of analysis screened (source: author).\(^\text{16}\)

<table>
<thead>
<tr>
<th>WITHIN SCOPE OF ANALYSIS</th>
<th>Turnover 2001</th>
<th>EBIT(^\text{17}) (%) 2001</th>
<th>EBIT (in Euro) 2001</th>
<th>Turnover 2003</th>
<th>EBIT (%) 2003</th>
<th>EBIT (in Euro) 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information and Communications (IC)</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>IC Networks</td>
<td>11412m</td>
<td>5.1</td>
<td>573m</td>
<td>15000m</td>
<td>7-10</td>
<td>1275m</td>
</tr>
<tr>
<td>IC Mobile</td>
<td>8990m</td>
<td>7.8</td>
<td>699m</td>
<td>15000</td>
<td>8-11</td>
<td>1425m</td>
</tr>
<tr>
<td><strong>Automation and Control</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Automation &amp; Control</td>
<td>946m</td>
<td>10.6</td>
<td>843</td>
<td>9000m</td>
<td>11-13</td>
<td>1080m</td>
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<tr>
<td><strong>Medical</strong></td>
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<tr>
<td>Medical Solutions</td>
<td>5061m</td>
<td>9.0</td>
<td>443m</td>
<td>7700m</td>
<td>10-12</td>
<td>850m</td>
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<tr>
<td><strong>Power</strong></td>
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<tr>
<td>Power Generation</td>
<td>8270m</td>
<td>0.7</td>
<td>58m</td>
<td>8500m</td>
<td>10-13</td>
<td>980m</td>
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<tr>
<td><strong>Transportation</strong></td>
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</tr>
<tr>
<td>Transport Systems</td>
<td>3996m</td>
<td>1.8</td>
<td>67m</td>
<td>4500m</td>
<td>5-7</td>
<td>260m</td>
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\(^\text{16}\) Table based on figures from Goldman Sachs. Figures for 2003 are estimates, see Capital, 11, 2001: 2.  
\(^\text{17}\) EBIT = Ratio of earnings before income tax to sales.
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Table 8: Levels of analysis screened (continued).

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<td><strong>Automation and Control</strong></td>
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<td>Industrial Solutions and Services</td>
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<td>185m</td>
<td>2300m</td>
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<td>283m</td>
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<td>42m</td>
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<td>Siemens Automotive</td>
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<td>86m</td>
<td>7500m</td>
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<td>Osram</td>
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<td>380m</td>
<td>4800m</td>
<td>10-11</td>
<td>500m</td>
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4.3. Unit of analysis: key projects investigated

The previous section discussed the level of analysis in terms of the different business units that are within and outside the scope of analysis. In this section, the unit of analysis is ascertained in terms of the key projects investigated. There is widespread consensus in the literature that defining the unit of analysis is vitally important (e.g. Denzin and Lincoln, 1994; Yin, 1994). Yin, for example, emphasized that:

“No issue is more important than defining the unit of analysis. ‘What is my case?’ is the question most frequently posed by those doing case studies. Without... an answer, [one] will not know how to limit the boundaries of [one’s] study.... The entire design of the case study as well as its potential theoretical significance is heavily dominated by the way the unit of analysis is defined.... This stage can assume a major proportion within the broader study [and can consume up to] 20% of the study’s overall resources.... My recommendation is that investigators spend intensive – even compulsive – effort at this stage” (Yin, 1994: 10, 12, & 110).

In line with Yin’s admonitions, the researcher spent considerable time and effort in defining the unit of analysis. The first ten months of the research were devoted to screening candidate cases on corporate level as well as on business unit level in the Siemens corporation. Parts of the results of this screening process were eventually published in book format (see Davenport and Probst, 2000). The selection of units of analysis finally considered most appropriate for the purpose of this study adheres to the logic of the single-embedded case study: the present strategy-making case study involves studying several units of sub-units of analysis under an umbrella project, which constitutes the main unit of analysis.

This single-embedded case study involves three units of analysis. The three units of analysis were three major corporate-level strategy-making projects that were underway at the time of the field study. The umbrella project was called the Top Plus

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18 This research comprised a total of 35 researchers, of which 22 were employees of the Siemens corporation, and 13 scholars from the Universities of St. Gallen, Geneva, Munich, Graz, and MIT. The study team began the screening process by contacting numerous individuals in the corporation and consulting available reports and literature. The information was based on responses to a structured interview of about 90 minutes, using a formal instrument (see Probst, 2000). The research team also encouraged the candidates to submit written materials and reports about its operations. These sources were used to suggest candidates who met the selection criteria.
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Program, which included measures to ensure business excellence. In addition to the Top Plus Program, two sub-projects were investigated. The first of these sub-projects was a major initiative to achieve sustainable growth in the company’s profitability. This project involved ten measures to optimize the company’s portfolio, and improve its capital structure, and was called the Ten Point Program. The second sub-project was specifically geared to improve the profitability of the Information and Communications Sector in order to achieve the medium-term profitability objectives set for 2003 and was termed Operation 2003. An overview of the timing of these key projects is provided in Figure 9.

Figure 9: Timing of the projects researched (source: author).

The idea behind the umbrella project, the Top Plus Program, was business excellence by focusing on the three so-called ‘Top Plus fields:’ productivity, innovation, and growth. Siemens made considerable progress in the three top fields after the implementation of the Top Plus Program. In terms of the first Top Plus field, productivity, the company had generally achieved productivity gains of between 3 and 4% a year before the program was conceived. Since the implementation of the Top Plus Program, however, the company accumulated productivity gains totaling nearly 40% (von Pierer, speech, February 18, 1999). In terms of the second Top Plus field, innovation, the company also made considerable progress. In the early 1990s, Siemens registered an average of 3000 inventions per year. At the time of the field study, the number had grown to more than 8000 per year (Raffler, interview,
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December 6, 2001). In terms of the third Top Plus field, growth, the company saw new orders climbing by 20bn Euro to nearly 60bn Euro (von Pierer, speech, February 18, 1999; von Pierer, speech, June 21, 2001).

However, these successes had not been matched by vigorous growth in the company’s earnings. The reason for this was seen in the tougher competitive area forcing Siemens to give up the largest share of its productivity gains to lower customer pricing. In recognition of this drawback, the Top Plus Program was made more “business-specific and binding” (von Pierer, speech, February 18, 1999). The motto of the Top Plus Program reflected this rationale by outlining three steps to achieve this goal: clear goals, concrete measures, and rigorous consequences. To make Top Plus more business-specific and binding, two main measures were designed. The first measure was the introduction of a new performance yardstick against which performance was gauged consistently throughout the entire company. This performance yardstick was economic value added19. Introducing economic value added as the standardized performance measurement yardstick helped Siemens to foster transparency and consistency among its units and local companies. In order to remain competitive in the future, all groups within Siemens therefore had to constantly increase their economic value added. The second measure continued to center on innovation and growth, but defined clearer goals and pilot projects as to how the company intended to proceed. Four key leverage points were identified: portfolio optimization, reduction of tied-up assets, earnings-oriented sales, cost reduction, and quality (von Pierer, speech, February 18, 1999).

The idea behind the second key project that was investigated for the present dissertation, the Ten Point Program, was to achieve sustainable growth in the company’s profitability. The strategic magnitude of the Ten Point Program was illustrated at the end of Siemens’ Annual Press Conference on December 3, 1998, when the CEO said:

“When we have implemented this package of measures [the Ten Point Program], Siemens will be a different company from the one you have known” (von Pierer, speech, December 3, 1998).

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19 Economic value added denotes profits minus capital costs (see, e.g. Bontis, Dragonetti, Jacobsen, and Roos, 1999).
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The Top Plus Program had been approved in July 1998, and included measures to enhance the company’s portfolio and improve its capital structure. Specifically, it included ten action items (von PIERER, speech, February 18, 1999):

1. Stabilize semiconductors. Strong cyclical fluctuations and highly volatile earnings, a situation to which the company wished to avoid over the long term, characterized the semiconductor market. For this reason, Siemens publicly listed its semiconductor group as Infineon Technologies on the Frankfurt and New York Stock exchanges in March 2000. At the time of the field study, Siemens held a majority stake (56% in July 2001), but intended to reduce its stake to below 51%.

2. Accelerate the Top Plus Program. Since October 1, 1998, economic value added had been the binding yardstick for all Siemens groups. Every business unit had its own, specific, economic value added target and was measured in terms of its contributions to increasing company value. In fiscal 2000, Siemens posted a positive economic value added for the first time - a year earlier than planned.

3. Divestments. In divesting businesses, the company pursued its aim to avoid unstable markets. First, it withdrew from volatile businesses (such as the semiconductor business), which did not fit the risk profile of Siemens investors. Second, it sharpened the focus of its portfolio by selling marginal businesses (such as defense electronics).

4. Strengthen the portfolio. The idea was “to bring the businesses into leading market positions. If a business is weak, there are five options for reaching this goal: fix, buy, cooperate, sell or close a business. I have always made it clear that the first option is the best: fix that which isn’t working” (von PIERER, speech, June 19, 2000).

5. Reorganize business segments. Reorganization centered on the Information and Communications segments, where the company consolidated its Information and Communications business area to form Information and Communications Mobile in order to meet the demand for new Information and Communications technologies and mobile phone activities.

6. Reduce tied-up capital. Reduction of tied-up capital was done by focusing on asset management (the management of investments in property, plant and equipment, working capital and real-estate). Asset management was one of the
company’s most important levers for improving economic value added by reducing tied-up capital on which interest must be paid.

7. Improve capital structure, through the introduction of no-par-value shares and registered shares, share re-purchases, and stock option plans. These measures were approved at the Annual Shareholders’ meeting on February 18, 1999.

8. Convert accounting system to U.S. GAAP standard. Conversion to U.S. GAAP accounting and financial reporting standard was completed by the end of the fiscal year 2000, in order to become more transparent to international investors.


10. Focusing on restructuring costs. An extraordinary charge of 2bn Euro for restructuring as posted in the fiscal year 1998 balance sheet, were used for measures in the semiconductor and the Information and Communications business segments.

The third key project investigated, Operation 2003, involved Siemens’ response to the market challenges present at the time of the field study. Despite a difficult business environment, Siemens intended to increase earning. At the company’s annual press conference in Munich 2001, von Pierer expressed confidence that the company had identified the appropriate strategies and would achieve clear successes in the fiscal year 2003 (hence the title, Operation 2003). In fiscal 2001 (ended September 30, 2001), Siemens reported net income of 2.088 billion Euros. This was considerably lower than the previous year’s record earnings and was ascribed to restructuring measures and special charges. Von Pierer said that the company’s earnings target for the fiscal year 2003 nevertheless remained unchanged (von Pierer, speech, December 6, 2001). This meant maintaining the company’s medium term goals for 2003, which had been coined in December 1999. These goals, measured as a ratio of earnings before income tax to sales, had envisaged a trend of plus 20% a year (Steffes, 2001). The commitment to these earnings before income tax margins were strong at the company. In the words of the CEO:

“We stick to our goals, we do what we say. It must be made clear that we stick to the 2003 medium-term goals... No matter how difficult this may be, we must take these steps regardless of the overall economic situation.... It is all about
achieving sustainable growth and profitability” (von Pierer, speech, June 21, 2001).

Siemens was therefore undertaking measures in view of the weakening economy, particularly in the areas of Information and Communications, where the focus was on a more rigorous application of the Top Plus Program (von Pierer, speech, June 21, 2001; Siemens World, Volume 4, 2001; Mirow, interview, September 26, 2001). More specifically, Operation 2003 comprised measures in four main areas of intervention (Steffes, 2001):

- **Restore profitability in the Information and Communications area.** In the fiscal year 2001, Information and Communications Networks was adversely impacted by cuts in investment by telecommunications operators and decreasing demand for enterprise telecommunications and networks systems. Operation 2003 was also taking hold at Information and Communications Mobile. At the time of the field study, the Mobile phones division was close to breaking even.
- **Top Plus U.S. Business Initiative.** The U.S., where Siemens, with the exclusion of Infineon, had sales of almost 20 billion Euros, became the company’s biggest single market. The Top Plus U.S. Business Initiative had been launched to substantially boost the profitability of Siemens’ American businesses. The initiative was concerned with the strategies and business processes at Siemens’ individual operating companies as well as with the improved utilization of synergies across the entire company.
- **Focus on asset management.** For 2001 as a whole, Siemens posted 7 billion Euros in free cash flow from operating activities.
- **Cut central costs.** The 2002 budget for corporate units had been reduced by some 15%. A cut of at least the same volume was planned for fiscal 2003. Similar measures were planned to cut overhead costs at the operating units and regional companies. By the end of the fiscal year 2002, Siemens expected to realize savings in this area of some hundred million Euros.

To summarize, this section discussed the relevant company and industry background at the time of the field study, defined the level of analysis in terms of the different business units investigated, and defined the unit of analysis in terms of the different
projects looked into. Analysis now turns to the empirical results as they relate to the individual parts of the strategy-making matrix.

5. Descriptive imagination in strategy making

All three key projects investigated in the case study (the Top Plus Program, the Ten Point Program, and Operation 2003) evidenced descriptive imagination. The following sections systematically (a) present the empirical research findings and (b) discuss the case-study evidence as it relates to the three-step framework developed in the theoretical part of this dissertation.

5.1. Step one: Envisaging imaginative strategies

This section presents and discusses the empirical evidence regarding the three imagination levers, defining industry boundaries, diagnosing competitive dynamics, and balancing the investment portfolio.

5.1.1. Defining industry boundaries

The umbrella project, Top Plus Program, started with a strong commitment to delineate the boundaries of the electrical engineering and electronics industry, and for Siemens to operate within these boundaries. The company’s CEO, Heinrich von Pierer, made this very clear at the 1999 Annual Shareholders’ meeting:

“We are – and will remain – an electrical engineering and electronics company. At the same time, we have never been driven by the false ambition to cover all sectors in this dynamically growing business. We will continue focusing our activities on a manageable number of business segments in which we can maintain or achieve a strong competitive position” (von Pierer, speech, February 18, 1999).

Siemens focused on two key dimensions when defining industry boundaries: customers, and competitors. The most important of these dimensions was the customer. Siemens was convinced that in defining industry boundaries, the fundamental starting point was the customer (Spangenberg, interview, December 5, 2001; Hausmann, interview, December 12, 2001; direct observation, October 23, 2001). As part of the Top Plus Program, Siemens had established a sophisticated approach, called ‘Pictures of the Future,’ to define industry boundaries using the
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customer dimension (Pictures of the Future, Volume 1, October 2001). Pictures of the future were detailed studies presenting Siemens’ visions of the five key corporate areas (Information and Communications, Automation and Control, Power, Transportation Systems, and Medical Solutions). The complex future scenarios developed by Siemens had two things in common: first, they illustrated the extent to which information and communication technologies would impact all areas of life in the future, and second, they were all associated with a high level of networking and reciprocal influence with Siemens’ other corporate areas (Raffler, interview, December 6, 2001).

This meant that in defining industry boundaries from the customer perspective, Siemens sought to gain a deep understanding of how Information and Communications would impact the consumer’s life, whether in the home, in the healthcare sector, on the move, during leisure time, or in the industrial sector. Interviewees were convinced that the boundaries between the five key corporate areas Information and Communications, Transportation Systems, Medical Solutions, and Automation and Control industries would blur, and that there would be an increasing overlap with the Information and Communications industry (Berner, interview, November, 15, 2001; Krubasik, interview, June 13, 2001). There was great consensus among interviewees that whether in Automation and Control, Transportation Systems, Medical Solutions, or Power, it was always telecommunication technologies that intelligently link, monitor, and control the components, systems, and devices (Raffler, interview, December 6, 2001).

It was very interesting to observe that Siemens’ approach to defining industry boundaries from the customer perspective led to new products and services at the intersection between its five key business areas. To illustrate: at the time of the field study, Siemens was busy developing an electronic bus and train ticket called ‘Smart Card’ that was intended to replace the paper ticket invented more than 160 years ago. The idea behind Smart Card was to enable those in possession of one to use all forms of public transport without having to buy and stamp different paper tickets every time. During the trip, the card would be detected by radio signals after every station, even through passengers’ pockets and purses. A radio unit installed in every bus or train would then communicate with both the Smart Card and a computer that processed the data. Since detection occurred only en route (the radio transmitter only had a range of several meters), cardholders were not billed unless they traveled. Depending on their
preference, customers either received a normal bill, or would have their charges debited from a pre-paid credit balance (Schwair, interview, December 13, 2001).

In gaining a deep understanding of industry boundaries, Siemens also focused on the competitor dimension, looking at both existing and potential competitors. Several interviewees noted that what separated Siemens from other companies was that all the building blocks of the ‘global information village’ (Krubasik, interview, June 13, 2001) were located under one roof, the Siemens company. In defining industry boundaries using the competitor perspective, Siemens was therefore able to develop a sophisticated picture of current and future competitors that could be offering alternative products. This approach to defining industry boundaries helped the company to take advantage of a multitude of opportunities for exploiting synergy potential and for generating new business by means of interdisciplinary solutions, while at the same time bearing potential competitors in these new industries in mind. Interviewees consistently cited two examples of interdisciplinary solutions that helped to envisage potential competitors (Pictures of the Future, Volume 1, October 2001; Schwair, interview, December 13, 2001; Raffler, interview, December 6, 2001):

- Software agents, independently acting and communication program units. These would not only support users when it came to finding information online, they could also help them by optimizing power network utilization, communications networks capacity, and travel route planning.
- Automation systems, originally developed for the manufacturing industry by Siemens, are currently needed for building management and the efficient operation of pharmaceutical plants, oil refineries, or mail sorting centers.

Discussion: Siemens developed a deep understanding of the boundaries of the industries in which it competed by looking into the customer and competitor dimension. This is consistent with recommendations on which the theoretical framework was based: while industries can be defined along a variety of dimensions, the key dimension is substitution possibilities on the supply (i.e. competitor), and demand (i.e. customer) side. For illustration: the literature-based, strategy-making matrix demonstrated that on the supply side, the strategy maker should look for alternative products offered by direct competitors, as well as those competitors who currently offer products or services that might be close substitutes of their own. On the demand side, customer preferences and technological trends should be taken into
account (e.g. Abell, 1980; Collis and Ghemawat, 1994: 175). This was consistent with Siemens’ focus on information and communication technology trends that strongly affected the company’s other operations.

However, while Siemens’ approach to defining industry boundaries in terms of substitution possibilities on the supply and demand side was congruent with the theoretical framework, less emphasis than expected was found on the vertical scope of an industry. In other words, how many vertically interlinked stages of the value chain should be identified for spanning (e.g. Collis and Ghemawat, 1994; Abell, 1980; Robinson and McDougall, 1998). This was particularly evident in the Informations and Communications industry. An explanation for this divergence from the theoretical framework could be that the Information and Communications industry was undergoing major changes at the time of the field study. Indeed, the very publication of the Pictures of the Future magazine can be seen as an attempt to keep abreast with the latest developments in this industry. These fundamental changes naturally also affected the value chains of market participants, making it less expedient to define the industry in terms of existing value chains. On corporate level, however, the case study showed a strong focus on the vertical scope when electronically networking the value chain through e-business applications. This observation perhaps compensates for the limited emphasis on the vertical scope in defining industry boundaries present in the Informations and Communications segment.

5.1.2. **Diagnosing industry dynamics**

Prior to the announcement of *Operation 2003*, Siemens had diagnosed industry dynamics. Diagnosing industry dynamics focused mainly on the very cyclical Information and Communications industry, which accounted for one third of Siemens overall volume (von Pierer, speech, February 18, 1999). A member of the board diagnosed the dynamics in this industry as follows:

“The global electrical and electronics market is growing at a rate of between 7 and 8% each year, making it the *world’s most dynamic large-scale industry*. It is an industry characterized by constant technological and structural transformation. The pace of progress in microelectronics and software development remains high, and product and system cycles are becoming ever shorter. New products and services, price pressures, globalization, more
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customer focus and e-business - these are the challenges we now face” (Krubasik, October 2001: 2, emphasis added).

Due to the intimate connection of the Information and Communications industry, with the other industries Siemens was competing in, the large-scale technological changes in Siemens’ most important industry had ripple effects in the other industries in which Siemens competed (Automation and Control, Power, Transportation Systems, and Medical Solutions). The company therefore made a conscious effort to diagnose the dynamics in the industries in which it was competing, in terms of the most important technological trends and discontinuities in Information and Communications that affected the company’s other industry dynamics (Berner, interview, November 15, 2001). Industry dynamics were clustered into so-called ‘Innovation Fields.’ A senior manager at the corporate technology department explained in an interview that

“[i]nnovation fields at Siemens mirror the five main areas in which Siemens is active.... These innovation fields are nevertheless more than simply reflections of Siemens’ corporate structure... The rationale for structuring innovation fields consistent with Siemens’ portfolio is simple: you need a deep understanding of the industry in order to extrapolate trends. To offset this intra-industry focus, corporate technology then suggests an alternative view, one from an external observer, if you wish” (Schwair, interview, December 13, 2001).

While Siemens conducted a comprehensive overview of technological trends affecting all its areas of operation, the following account focuses on the evidence relating to the business units that are within the scope of analysis of this dissertation: Information and Communications Networks, Information and Communications Mobile, Automation and Control, Transportation Systems, Medical Solutions, and Power Generation.

The Information and Communications Networks and the Information and Communications Mobile business units were most strongly affected by technological trends. The first of these trends was that the boundaries between information, communications, and entertainment technologies were becoming increasingly blurred. The Internet Protocol was to become the most common standard, bandwidths and security problems would be overcome. This development of bandwidths would eventually open up virtually unlimited access to information of all kinds, at any time
and with any type of end-user terminal or content. Moreover, voice, gesture, and mimic recognition would make devices and applications easier to operate. In particular, software agents would become familiar with their users’ preferences and guide them through a massive amount of data (Raffler, interview, December 6, 2001; Pictures of the future, Volume 1, 2001).

The *Automation and Control* business unit was characterized by globalization of its markets, ever-shorter innovation cycles and progressive, worldwide networking, which brought decisive change in production and logistics. In particular, the ‘transparent factory’ (Raffler, interview, December 6, 2001) would be born. In the transparent factory, information and communications technology would make it possible to network business processes, especially in industrial manufacturing between all its production levels. Those employees with proper authorization would then be able to obtain an overview of all processes and also control them, while a global data-network would extend the entire value chain. Furthermore, a variety of intelligent sensors would increasingly decentralize automation solutions in both industrial plants and buildings, while tele-service as well as remote maintenance and diagnosis would become increasingly commonplace. Finally, software tools for forecasts, simulations (e.g. virtual engineering and virtual production), and augmented reality (i.e. the merging of computer and real images) would support decision making (Raffler, interview, December 6, 2001).

The dynamics in the *Transportation Systems* industry would be characterized by more efficient means of transport, i.e. less noise and pollution would be produced. This would be made possible by innovations like rapid valves for direct fuel injection, new catalytic converters, light-weight materials, new methods of vibration reduction, and software for low-energy or automatic operation of vehicles (e.g. streetcars or subways). Particularly important for Siemens at the time of the field study was the trend towards new means of transport such as the Transrapid magnetic levitation train. This form of transportation was designed to compete with aircraft for medium-distance travelers. In addition to this, intelligent methods of payment (such as the Smart Card) would make public transport much more convenient for travelers. Finally, situation-based driver assistance systems would increase comfort and safety in terms of parking, collision warnings, (semi-) automatic driving, multimedia entertainment, plus office and Internet access in vehicles (Eberl, 2001: 12;
In the Medical Solutions industry, improved technology would make it possible for medical doctors to obtain an increasingly detailed look inside the bodies of their patients. Various imaging systems that can be linked to computers could serve to service detailed, high-resolution images and improve diagnostic accuracy. These systems would use simulations to make subsequent operations safer for patients. Specialized analysis software would assist doctors in decision-making (computer-aided diagnosis). In an interview, the head of the Top Plus Program at Medical Solutions illustrated that computer-aided simulation could furthermore lead to minimally invasive techniques and could consequently reduce physical strain for patients. Health care systems of the future would form a network centered around the private living area of the individual and integrating payer institutions, hospitals, medical practices, and pharmacies. Information and communications technology would provide the necessary requirements to offer medical care and assistance at home. This would enable people suffering from chronic diseases, or those dependent on special care after cardiac infraction or a stroke, to live at home and to feel safe there, while sensors worn directly on the body would monitor vital functions such as pulse, respiratory rate, and blood pressure (Hausmann, interview, December 12, 2001; Corporate Technology, 2001: 8).

Finally, the Power industry was characterized by a massive deregulation of the energy markets. This was bringing unprecedented structural change to every aspect of the power industry, from generation and transport of electricity to consumer sales. As with the other industries in which Siemens was competing, information and communications technology in all its forms was assuming a key role in the structural change in the power industry. In particular, energy supply and associated services would no longer be coming from a single source. To illustrate: while transmission and distribution would continue to be monopolistic because of existing networks, generation and sales were under pressure to cut costs as a result of increased competition (Corporate Technology, 2001: 10; Stuckenschneider, interview, November 22, 2001). On the other hand, energy providers would transform themselves into multi-service companies offering not just gas and electricity, but also telephone and Internet services plus garbage disposal (Eberl, 2001: 11).
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Discussion: The theoretical framework outlined three key areas of investigation when diagnosing industry dynamics: capital intensity, product differentiability, and industry growth rate/rate of innovation activity in a given industry (Schendel and Teece, 1994: 23). The different sources consulted for the case study produced different emphases among these three key areas. On the one hand, for example, many interviewees consistently emphasized that capital intensity (e.g. in the form of asset management), or industry growth rate (a concern particularly in the area of Information and Communications, where the industry was in fact not growing at all). On the other hand, most archival material consulted in the case study emphasized the rate of innovation/technological trends and discontinuities clearly played the most important role in the Siemens case study. The two other key areas (capital intensity and product differentiability) were also present in the archival data, albeit to a lesser degree. With regard to capital intensity, a differentiation can be made between Siemens’ capital-intensive industries (i.e. Power, Transportation Systems, and Automation and Control) and less capital-intensive industries (i.e. Information and Communications and Medical Solutions). In line with the recommendations in the literature, a firm in a capital-intensive industry is generally committed to one course of action, since capital intensity often creates rigidity in production processes to such an extent that new products and markets cannot be accommodated without incurring high costs. Hence, deviations from past practices are far fewer in capital-intensive industries. Consistent with the literature, the case study demonstrated less need for a constant diagnosis of industry dynamics in capital-intensive industries (such as Power and Transportation Systems) than in the more dynamic information and communications industry (Ghemawat, 1991; Datta, and Rajagopalan, 1998; Haussmann, interview, December 12, 2001).

In terms of product differentiability, Siemens traditionally operated in industries that were characterized by high product differentiability. This was mainly because all of the industries in which Siemens was active at the time of the field study were fundamentally affected by information and communications technology, in which Siemens was a long-term leader in out-innovating the competition. However, particularly in the wireline and wireless telephony industry, Siemens was operating in a commodity industry where the contenders all had very little room for out-innovating the competition. This is consistent with observations made by Fahey and Christensen (1986), and Porter (1985), who argued that industries that are highly differentiated
tend to offer more potential for out-innovating the competition than industries which are less differentiated (these tend to focus more on cost and efficiency factors).

5.1.3. **Balancing the investment portfolio**

The case company referred to itself as ‘a paragon of portfolio strategy’ (direct observation, October 2001); all key projects investigated displayed an explicit focus on balancing the investment portfolio. To illustrate: the *Ten Point Program* featured a separate point dedicated to ‘strengthening the portfolio’ (von Pierer, speech, February 22, 2001). Similarly, *Operation 2003*, with its focus on ‘strengthening the Information and Communications business’ demonstrated Siemens’ clear commitment to balance the investment portfolio (Siemens World, Volume 4, 2001).

The most illustrative example of balancing the investment portfolio was found in the *Top Plus Program*. The Top Plus Program featured a special section on portfolio management, and the program itself was frequently, if not officially, referred to as ‘rigorous portfolio policy’ (e.g. von Pierer, speech, February 18, 1999; and von Pierer, speech, February 22, 2001). Four principles to balancing the investment portfolio were most often encountered in the interviews and the archival material. First, Siemens would continue focusing its activities on a limited number of businesses, and these businesses would be within the electrical engineering and electronics industries, which include complex systems technologies and the solution and software businesses (von Pierer, speech, February 22, 2001).

The second principle for balancing the investment portfolio demanded a *weighted risk structure*. Thus, Siemens strove to achieve

“a healthy mixture of businesses in both attractive growth markets as well as in established markets. Only then can we tolerate high risks in young markets and in new, strategically important business fields” (von Pierer, speech, February 18, 1999).

Various media throughout the case-study evidence emphasized that the relative strength of Siemens was that it operated in a range of different businesses, which are subject to different economic cycles, as well as spreading its activities internationally so as to have a balanced portfolio of national economic cycles (Financial Times, January 21, 2002).
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The third principle for balancing the investment portfolio regarded the relative competitive position of the individual business units to the competition. The axiom here was that 80% of the business activities should achieve number 1 or 2 rankings worldwide. At the time of the empirical analysis, Siemens had achieved this in 60% of its business activities (von Pierer, speech, February 22, 2001).

The fourth, and final, principle for balancing the investment portfolio at Siemens was generally considered “especially important” (e.g. von Pierer, speech, February 18, 1999), and demanded that each business prove its ability to sustain long-term profitability on its own. In other words, no cross-subsidies were allowed among the business units in the portfolio. This meant that all businesses had to earn at least their capital cost (von Pierer, speech, February 18, 1999; von Pierer, speech, February 22, 2001). The Top Plus Program demonstrated that each business must benchmark itself against the best in its industry. If it could not achieve their goals alone within a set time limit, other solutions were considered, including cooperation or divestment. According to von Pierer, “there are no exceptions to this rule” (von Pierer, speech, February 18, 1999). On occasion of the 1999 Siemens Press conference, von Pierer emphasized:

“We want Siemens to have a balanced business portfolio. We need cash cows in mature business fields. We also need activities in growth fields that initially require up-front investments, but will ultimately secure future opportunities. Our portfolio has to be balanced to ensure that each business profits from the synergies and financial strength offered by the company without burdening the units” von Pierer, speech, December 12, 1999).

In various media consulted for the field study, it was repeatedly emphasized that Siemens had adopted a new approach to balancing the investment portfolio. The new approach envisaged only retaining those businesses in the portfolio whose market cycles are accepted by the Siemens investors. This was seen as “management becoming more aggressive” (e.g. direct observation, October 23, 2001; Davenport and Probst, 2000). The basic three options were “fix, sell, buy, or cooperate” (Mirow, interview, September 26, 2001). This new, and more aggressive, approach to balancing the investment portfolio was often given as the reason for the step-by-step exiting from the manufacture and marketing of semiconductors, which were handled
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by a separate company, Infineon (direct observation, October 23, 2001; Krubasik, interview, June 13, 2001).

The new approach to balancing the investment portfolio at Siemens furthermore foresaw that every business was *measured against the global market*. Previously it had been customary to measure performance of the individual businesses in the portfolio in terms of a predefined ‘relevant market.’ However, this was often only a niche market in the actual playing field. This practice tended to place market share and market position in a much more favorable light than applicable. Evaluation in terms of the global market provided the company with a more rigorous and accurate picture of the competitive position, and it also made it easier to identify the businesses that required additional action (von Pierer, speech, February 22, 2001).

The new approach to balancing the investment portfolio at Siemens was informed by a clear commitment to the corporate conglomerate structure in order to foster *synergies* among the individual businesses. Siemens had grown with the industry it has helped to shape for more than 150 years, the head of corporate strategy summarized in one interview (Mirow, interview, September 26, 2001). Starting from its founder’s innovations, such as advanced telegraphic equipment, Siemens had developed into a highly integrated technology and sales network. The value of the conglomerate form was emphasized in various media (e.g. von Pierer, speech, January 19, 1998; von Pierer, speech, February 22, 2001; Mirow, interview, September 26, 2001). The common denominator was that while some analysts had thought that the sum of the value of individual businesses in the corporate portfolio might be higher than the market value of the company as a whole,

“[t]his kind of calculation is hypothetical. It is not at all clear, for example, whether Siemens’ individual parts could survive on their own. If, for example, their sales organizations were broken up or their know-how drained off. Siemens is a living organism, and you can’t just cut off an arm to see if it can run around on its own” (Mirow, interview, September 26, 2001).

Precisely this focus on synergies represented an unexpected *new insight*. In the case-study evidence there was a clear commitment to developing and exploiting synergies as the key criterion for making portfolio decisions. This is very interesting given that
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the traditional measure for making portfolio decisions is cash flow, suggesting that the basis for decision-making is the synergies, not the cash flow:

“While we continue to expand our business in certain groups, we are encountering limits in others. We can’t do everything ourselves. This is particularly true when we see no synergies, yet there is an obvious need for substantial investments and new know-how. In such cases, we pull out of the business, even if it’s profitable.... There are also cases where we recognize that we can gain no competitive advantages from technologies, marketing or costs, and even have disadvantages as a large company” (von Pierer, speech, January 19, 1998).

Discussion: Overall, there was a very good fit with the empirical framework. To illustrate: throughout the three key projects investigated, various data sources supported the conjectures made in the theory-based part of this dissertation. In particular, the principles for decision-making in balancing the investment portfolio in the Top Plus Program should be seen as a paragon of portfolio strategy (e.g. Henderson, 1979; Porter, 1980). According to the literature, this clearly could be a similarity Siemens shares with other large, diversified firms, which operate in a variety of industries (e.g. Rumelt, Schendel, and Teece, 1994; Chandler, 1962; Ansoff, 1963).

Perhaps the more interesting finding lies in the apparent difference with the theoretical framework. To illustrate: while the literature consistently emphasized the cash flow of the individual units as the basis for decision-making in balancing the investment portfolio (e.g. Porter, 1980; Henderson, 1979), the Siemens case study emphasized synergies created, or synergy potential among the businesses in the portfolio as the primary basis for decision making. Siemens’ emphasis on synergy potential should be appreciated as perhaps being more sophisticated than the conjectures in the literature, which emphasize past cash flow. Siemens’ emphasis on synergy potential rather than past cash flow as a key principle in balancing the investment portfolio should therefore be seen as a valuable new insight generated by the empirical study.
5.2. Step two: Conceiving imaginative strategies

This section presents and discusses the empirical evidence pertaining to the three imagination levers configuring value chain activities, establishing a position, and defending this position.

5.2.1. Configuring value chain activities

While emphasis on the configuration of value chain activities was implicit in the Ten Point Program and Operation 2003, strong explicit evidence was found in the Top Plus Program, which focused on asset management, as well as the configuration of activities along a so-called ‘Total Solution Value Chain.’ The Total Solution Value Chain will be discussed next, followed by an appraisal of the Top Plus tool ‘asset management.’

The configuration of value chain activities in terms of the Total Solution Value Chain represents a most interesting example of Siemens’ approach. A key learning in the Top Plus Program was that the knowledge assets of the company became increasingly important as the key value-adding activity. In recognition of this insight, Siemens Information and Communications Networks started configuring value chain activities by mapping them in terms of the knowledge required for each element. By mapping the value chain in terms of knowledge, the decisions that have to be made at every step of the process, the problems that employees have to solve, the types of knowledge necessary to make those decisions in an informed way, or to solve those problems effectively and efficiently, Siemens could identify the key employees, make their tacit knowledge explicit (to the degree possible), create a context or structure for their interaction in terms of three key activities: business development, customer planning, and bid preparation (Halbherr and Howard, 1999: 12):

1. **Business development** included the questions: what are the competitive and regulatory trends in the market?, what are the technology and innovation trends in the market?, and where are customers currently focusing?
2. **Customer planning** included the questions: what is the competitor focus and its offerings?, what is the competitors’ relationship with the customer?, and what is the customer setup and decision making environment?
3. **Bid preparation** included the questions: what technical solution components need to be integrated to create value for the customer?, which complementor products can be integrated?, and what is the relationship with the customer?
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To configure value chain activities in terms of the Total Solution Value Chain, Siemens Information and Communications Networks started off by creating a team to address the basic question ‘how do we sell?’ Members of this team included some of the company’s most experienced salespeople, the heads of the key country organizations, and representatives from markets around the world that covered the full spectrum of business situations that the company faced. An interesting new insight that emerged was that by involving the company’s customers in the configuration of value chains, valuable new inputs could be gained. In one case for example, a sales team in an Asian country had bid on a project only to have its pricing structure rejected by the customer as ‘too high.’ The reason for this was that since the Asian telecom was partly owned by the company’s home country-customer, it had access to the supplier’s home-market pricing, which was knowledge that the local sales team in Asia did not have (Halbherr and Howard, 1999: 13).

Thus, partly aided by the input of the company’s customers, the team developed a high-level map of the solutions-selling process and identified broad categories of business-relevant knowledge necessary for each step (business development, customer planning, and bid preparation). The team then used the framework to analyze a representative cross-selection of recent sales projects. Traveling around the world, members conducted workshops to map each project with relevant sales teams. The workshops helped the teams to understand how its general view applied to specific situations. With this detailed knowledge, the team was able to refine its Total Solution Value Chain and to specify in fine-grained detail the question salespeople need to answer in order to develop appropriate solutions for their customers and then win the contract (Halbherr and Howard, 1999: 11-16).

In addition to the approach of the Total Solution Value Chain, Siemens configured its value chain through a clear commitment to asset management (Neubauer, interview, November 16, 2001). Indeed, the Top Plus Program was committed to configuring value chain activities through the special module ‘asset management.’ The idea behind asset management was to deploy assets in the best possible way, i.e. by reducing them and keeping them as low as possible. Of the assets considered, working capital\(^\text{20}\) received specific attention. The asset management component of the Top Plus Program involved optimizing the following key processes:

\(^{20}\) Working capital is made up of receivables and inventories less payables and downpayments received. Working capital and fixed assets together constitute a company’s business assets.
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- The process from formulation of an order through order progressing to receipt of payments (the ‘order to cash’ process),
- The process by which materials flow through the company, from storage and production to shipment (the ‘total supply chain’ process), and
- The process from selection of suppliers through purchase orders to receipt of goods and payment of the suppliers (the ‘purchase to pay’ process).

For example, the regional company Hungary used a system of metrics to track the progress of asset management. The assets of individual cost centers were monitored on a monthly basis in terms of criteria such as the days sales outstanding, the days inventory outstanding, the days payables outstanding, the days of working capital, and age of receivables. In order to ensure ongoing improvement in asset management, the incentive system was also modified. To encourage managers to minimize current assets, bonuses did not only reflect business profitability, instead, they were also based on a positive cash balance (Neubauer, interview, November 16, 2001).

In configuring value chain activities, their *global configuration* was an important aspect in the case-study evidence. The founder of Siemens himself, Werner von Siemens, hinted at the importance of configuring the value chain globally: “since I was a boy, I have been infatuated with founding a worldwide business à la Fugger” (von Siemens, 1966). Von Siemens’ vision had been steadily pursued, and already in 1850 the percentage of revenues generated outside Germany was more than 50%. (von Siemens, 1966). At the time of the field study, the importance of the earnings contributed by non-German business was illustrated by their comprising three-quarters of Siemens’ entire volume (Mirow, interview, September 26, 2001). Furthermore, major steps were taken to ensure that the company put the ‘centralist viewpoint of the German headquarters’ in the proper perspective:

“Let me point out just two examples here. First, the establishment of our network of global centers of competence, which are managed from locations outside of Germany. This move has helped us make progress in adjusting regional value chains to the regional business structure. And second, the process of regionalization, or having regional companies take over business responsibilities across national borders.... We will continue to expand this strategy around the globe” (von Pierer, speech, June 25, 2001).
The global configuration of Siemens’ value chain activities was further emphasized in an interview with the Chairman and CEO of Siemens, von Pierer:

“We have 470,000 employees in 190 countries, less than half of these, about 180,000, in Germany, all of which are internationally networked. And our global brand opens doors. Who is more global than Siemens? Perhaps Coca Cola – I’ll accept this as a possibility” (von Pierer, interview, June 18, 2001).

The need for a ‘glocal’ approach (i.e. an approach that is both global and local) in configuring value chain activities was illustrated by a member of the corporate board, Radomski:

“Within our global context, our regional companies represent one thing above all, proximity to the customer! A Spanish power utility is certainly not going to be happy receiving its support from a British sales engineer. Within the context of internationally successful business activity, it is essential to take proper account of cultural and linguistic diversity.... [This] will only be successful in the long term if proper account is taken of the regional needs and special circumstances of our customers. For us, it’s a fact that all global business is local” (Radomski, interview, February 14, 2001).

Discussion: The empirical evidence supported all of the conjectures made in the theory-based imagination lever ‘configuring value chain activities,’ albeit in varying degrees. First, Porter’s conjecture that the value chain framework represents a heuristic for disaggregating activities on a global basis, suggests that the resulting activities have different economics, a high potential impact on differentiation, and represent a significant proportion of cost (Porter, 1985: 39-40, 1994: 110), could be validated. This is perhaps not surprising, given that Siemens studied Porter’s writings to configure its value chain activities. Against this background, it was very interesting that less emphasis than expected was found for the two-level generic taxonomy of value chain activities that includes primary activities and support activities (Porter, 1985: 38). In the case-study evidence, the boundaries between primary activities and support activities could not be clearly delineated. For example, knowledge would be a support activity in Porter’s framework (Porter, 1985), however, in the Total Solution Value Chain, knowledge was regarded as a primary activity.
Precisely the problem encountered in delineating primary and support activities is, however, consistent with more recent scholarly research that dismissed the value chain’s two-level categorization as out-dated (e.g. Eisenhardt and Sull, 2001; Shapiro and Varian, 1999; Evans and Wurster, 1999). As discussed in the literature-based theoretical part of this dissertation, the main thread of argument in these contributions revolves around the impact of knowledge management on the value chain. Most authors agree that since every activity involves the creation, processing, and communication of knowledge, knowledge management exerts a tremendous influence on the configuration of the value chain. It particularly blurs the distinction between primary activities and support activities in the value chain (e.g. Evans and Wurster, 1999). The Total Solution Value Chain should be seen as the epitome of this conjecture.21

An intriguing new insight should also be appreciated. In configuring value chain activities along the Total Solution Value Chain, Siemens purposefully involved corporate customers. This helped the company get ‘the customer perspective’ on the usefulness of a particular value chain map. Involving the customer perspective was considered very useful by the case company, because customers often knew more about the company’s sales process than the company itself did.

5.2.2. Establishing position

As part of the Top Plus Program, Siemens had developed a sophisticated benchmarking technology in order to establish its position relative to its main competitors. Since the Top Plus Program was the umbrella project for the Ten Point Program and Operation 2003, all three projects reflected the importance of benchmarking in establishing a position relative to competitors (Neubauer, interview, November 16, 2001). In the words of von Pierer,

“We have... introduced obligatory and ongoing benchmarking, which entails a rigorous comparison of our own situation with that of the best in the world. Concrete programs are then derived from these benchmarking surveys to indicate how we can close the gap with the world’s best performers, and how long this will take” (von Pierer, speech, February 22, 2000).

21 In this context, it is noteworthy, that the Boston Consulting Group’s head office in Boston, Massachusetts was involved in configuring the Total Solution Value Chain, and it is likely that aspects of Siemens’ approach informed Evans’ and Wurster’s approach and vice versa.
In establishing position, Siemens differentiated between benchmarking in competitor benchmarking and that of process benchmarking. One interviewee noted that this differentiation was one of the most important differences between successful business and unsuccessful ones (Schoss, interview, November 21, 2001). Competitor benchmarking centered on looking into the cost position, and into the innovation position of the relevant competitors in the same industry (Neubauer, interview, November 16, 2001). By contrast, process benchmarking looked into the sophistication of Siemens’ production processes relative to competitors in the same industry and also in other industries.

**Competitor benchmarking.** In the Top Plus Program framework, a competitor obtaining higher profit margins prompted questions such as: How does he accomplish this? Is his performance based on superior cost position, products, or pricing? If it is cost position, how large is it and from where does it stem? Does he get lower prices from suppliers or are his sales processes more efficient? And in particular, in how far is his unique selling proposition different from ours? (Neubauer, interview, November 16, 2001). To illustrate: in the fiscal year 2000, the business unit Power Generation (which was producing steam turbines and generators) carried out a competitor benchmarking study. The result of the benchmarking study revealed a substantial cost gap to the main competitor, General Electric. The unit management therefore successfully set the goal of closing this gap through product standardization and supply chain management (Neubauer, interview, November 16, 2001).

The second form of benchmarking at Siemens, *process benchmarking* was different from competitor benchmarking, in that it benchmarked best practice across industries, rather than benchmarking relative to a competitor in the same industry. The rationale was that even if a business unit of Siemens was already ahead of its direct competitors, it could still improve its processes by benchmarking them with companies that are well known for their best practice across industries. The head of the Top Plus Program explained in an interview:

“How in the Top Plus framework, benchmarking does not happen within a single industry, only. Top Plus provides suggestions on the methodology of benchmarking, but what is to be benchmarked is up to the individual units.... If our mobile phone division benchmarks its processes against Nokia or Coca
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Cola, it is up to them. In competitor benchmarking, the benchmark partner is the direct competitor” (Neubauer, interview, November 16, 2001).

When using process benchmarking, the first step was to analyze and prioritize the processes to be benchmarked. This was often done by choosing the processes that were relevant for differentiating the unit from its competitors, and that had a significant potential for improvement. In a second step, the best-in-class benchmarks were identified. During benchmarking visits, questions were answered like: How does this company handle the process we want to improve, which conditions do they have to cope with and how is this process integrated? (Neubauer, interview, November 16, 2001). It was interesting to note that the case-study evidence made it clear that unlike in competitor benchmarking, the benchmarked business was quite open to such questions, since the benchmarked business was typically not a direct competitor and could even benefit and learn from the process-benchmarking endeavor (Neubauer, interview, November 16, 2001).

An interesting new insight that emerged in the case-study evidence was that the benchmarking process not only helped in ascertaining the cost position, but also helped in stimulating innovation (Neubauer, interview, November 16, 2001; Klementz, interview, November 20, 2001). To cite a senior manager in the Transportation Systems business unit:

“Benchmarking projects not only helped to identify cost and productivity gaps, but also supplied valuable new insights and business ideas. To illustrate: by ascertaining what the benchmarking partner did in terms of services, the profit potential of putting greater emphasis on services became evident” (Gerstenmayer, interview, December 4, 2001).

Discussion: The case-study evidence corresponds very well with the theoretical framework. Siemens clearly developed a very deep understanding of the importance of benchmarking in establishing a position. The company was driven by a relentless ambition to become better than its immediate competitors. In line with recommendations in the literature, this demanded adequate consideration of the competitors’ relative positions, and the underpinnings thereof. In descriptive imagination the approach taken to reach this end is typically one of benchmarking best in class competitors. According to the literature, benchmarks can be established
by carefully describing traits and characteristics that make competitors successful (e.g. Davenport, 1993; Hammer and Champy, 1993). As recommended by Harrington, such benchmarks needed to be realistic, even if they require a stretch, and attainable within the company’s current environment (Harrington, 1991). As recommended by Johnson, areas for benchmarking include, but may not be limited to: financial performance, quality, service ratings, cycle time, brand awareness, and market share (Johnson, 1988, 1994). Siemens’ differentiation between benchmarking as in competitor benchmarking and that of process benchmarking was an accurate reflection of both recommendations.

5.2.3. Defending position

The theoretical framework highlighted the establishment of entry barriers such as superior quality, favorable cost positions, or a well-established brand name as the main points of leverage for defending a company’s position. Specifically, Siemens focused on three key areas when defending its position relative to competitors: quality, the Siemens brand name, and cost.

The Top Plus Program had a special commitment to quality. The Top Plus team found that after years of moderate returns and a reasonable degree of satisfaction with quality output, Siemens had to take a fresh look at its established processes and needed to re-assess them in the light of quality management principles (Gerstenmayer, interview, December 4, 2001; Neubauer, interview, November 16, 2001). The key to success was found to lie in mastering processes and establishing continuous process improvement. The Top Plus Quality initiative focused on two aims, namely:

- reducing non-conformance costs,\(^{22}\) and
- increasing customer benefit.

In order to achieve these two objective, the Top Plus methodology provided a six-step approach:

1. defining improvement objectives,
2. determining main problem areas,

\(^{22}\) Non-conformance costs were defined as costs for finding and clearing non-conformance or weaknesses and their causes that result in products or services not meeting their requirements.
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3. identifying improvement levers,
4. defining measures,
5. implementing results, and
6. monitoring progress.

In October 2000, the Power Generation Division started a Top Plus quality project, strictly adhering to the above six-step approach. A key learning was that in the past attempts to improve quality often began with step four, ‘measures.’ This, however, was found to lead to directionless implementation of measures, because the fundamental steps ‘defining improvement objectives,’ and ‘determining main problem areas’ were not ascertained in a first step. Managers therefore had to identify improvement potential on the basis of strategic business planning and with the help of benchmarking and self-evaluation. Important questions to be asked included: how high are the non-conformance costs?, where do they originate from?, which problems are worth the effort of improving?, and where should leverage be applied? Members of the Top Plus Project team, who also focused managers’ attention on the process, supported the first three steps. This was considered a key success factor, because without management attention, successful application of the Top Plus measures was questionable. Steps four and five involved the systematic development and application of measures at the process level, supported by top management. The method chosen was Six Sigma, an approach that involved various (mainly statistical) techniques and tools for optimizing process chains and which had also been used successfully by other companies. So-called ‘Black Belts’ were also used in putting the quality initiative on a firm path ahead at Power Generation. Step six was still ongoing at the time of the field study, but involved the constant monitoring of the initiative with the help of case studies, analyzing, defining improvement goals, and knowledge sharing about the lessons learned in the initiative (Siemens World, Volume 3, 2001; Neubauer, interview, November 16, 2001).

In recognition of the importance of quality management in defending Siemens’ competitive position, the so-called ‘Q-Days’ were held regularly in order to raise awareness among employees and to share best practices in quality management. The case-study evidence showed that success depended on three basic factors (Neubauer, interview, November 16, 2001):

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23 Black Belts were specialists in Six Sigma techniques who obtained intensive training, and were then used as project managers in rolling out Six Sigma.
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- management attention,
- transparency, and
- qualification and training programs.

Several interviewees emphasized that a high level of personal support by top management was considered particularly crucial to ‘set an example,’ and laid the groundwork for quality improvements. Quantification along the entire sequence of business processes created the transparency required to achieve targets that were set and to monitor where deviations from these targets occurred. Finally, qualification and training programs as part of the Top Plus Program empowered employees to carry out quality projects successfully (Neubauer, interview, November 16, 2001; Schoss, interview, November, 21, 2001).

The Ten Point Program foresaw the turning of Siemens into a true e-business company (Davenport and Probst, 2000: 232). As part of this exercise, the e-business transformation team ascertained what the key success factors of Siemens in an e-business context were. One of the key learnings of the team was that the Siemens brand name represented one of the least surmountable barriers to entry. Various media in the case study emphasized that this brand name stood for trust, and individualized solutions for Siemens’ customers (direct observation, October 23, 2001; Davenport and Probst, 2000: 231; Klementz, interview, November 20, 2001). Interviewees said that while the concept of branding was hardly a new one, it took on added significance in the new online environment. The widespread accessibility and availability of the Internet, coupled with the comparatively low cost of entry for new competitors, effectively leveled the playing field, because competitors were just a ‘mouse click away’ (Mirow, interview, September 26, 2001). The Siemens brand name, trusted for more than 150 years, represented the most important assets of Siemens in defending its position in an e-business context, and interviewees were convinced that “price does not rule the Web, trust does” (Davenport and Probst, 2000: 233; Klementz, interview, November 20, 2001; direct observation, October 23, 2001).

Operation 2003 focused mainly on reducing costs in defending Siemens’ position in general and the position of the Information and Communications division in particular. At the time of the field study, the full extent of cost-cutting measures under the Operation 2003 roof could not yet be fully appreciated by the researcher, and were therefore not considered for inclusion in this dissertation.
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Discussion: Overall, the case-study evidence relates well to the theoretical framework. Defending position in the markets in which Siemens was operating clearly played a very important role in the case study. All three elements of defending a position, as mentioned in the theoretical framework, were present: first, securing ‘monopoly rents’ (Teece, Pisano, and Shuen, 1997: 511), and second, erection of entry barriers to prevent an influx of firms into an industry (Porter, 1994: 178). However, while the theoretical framework focused mainly on the type and scale of investment required to enter a particular industry as the most important of such barriers to entry, the case study emphasized expertise in quality management. This deviation from the theoretical framework was somewhat compensated by the emphasis on the Siemens brand name, which was the second important barrier to entry in the case-study evidence. The focus on the brand name was consistent with the theoretical framework (e.g. Porter, 1994: 179). Furthermore, the case-study evidence tied in very well with the theoretical framework regarding the particular importance a trusted brand name assumes in defending a position in an e-business context, where switching costs are low (Porter, 2001: 68; Evans and Wurster, 2000; Shapiro and Varian, 1999).

5.3. Step three: Realizing imaginative strategies

This section presents and discusses the empirical evidence relating to the three imagination levers discriminating generic strategies, cultivating competitive angst, and creating a fit with the environment.

5.3.1. Discriminating generic strategies

The case-study evidence showed ample evidence of the usage of the Porterian ‘generic strategies.’ In fact, the strategy-making jargon at Siemens was an almost verbatim echo of many of Porter’s concepts. Thus, concepts of ‘cost leadership,’ ‘differentiation leadership,’ or ‘focused strategies’ pervaded all three projects investigated (the Top Plus Program, the Ten Point Program, and Operation 2003), and could be ascertained throughout all media consulted in the empirical study (e.g. Mirow, interview, September 26, 2001; direct observation November 14, 2001; direct observation October 23, 2001; direct observation May 14, 2001; Siemens World Volume 3, 2001). Perhaps the most interesting aspect of this focus on discriminating generic strategies at Siemens was their long-term orientation. Throughout the entire field study, there was strong evidence of continuity as one of the keys in Siemens’ strategy-making approach (e.g. von Pierer, speech, January 22, 2001, direct
observation, October 23, 2001; Mirow, interview, September 26, 2001). In the words of the CEO:

“Siemens is proud of its 150-year old tradition. And our Top Plus Program today bases its core elements on the values and strategies of our founder, Werner von Siemens. Part of this company philosophy is that we think and work with a view to the future. *We don’t believe in the short term ‘get in, get out’ strategy* many believe we should follow” (von Pierer, speech, February 13, 1997; emphasis added).

The Top Plus Program, the Ten Point Program, as well as Operation 2003 invariably emphasized the long-term nature of the generic strategies underlying these key projects investigated. Perhaps the best illustration of this approach to extend the current strategy without major shifts or quantum leaps, was epitomized by the very motto of Operation 2003:

“We stick to our targets – we do what we say” (von Pierer, speech June 13, 2001).

In the case of Operation 2003, the targets mentioned by von Pierer referred to revenue growth estimates based on the calculations of December 2000, i.e. in bullish market situation. Despite the unexpected market downturn, particularly in the Information and Communications divisions, Siemens’ approach for discriminating generic strategies was to sustain long-term growth and revenue targets for the individual divisions, i.e. for fiscal 2003. To cite von Pierer:

“Where are we heading? Last December we negotiated medium-term target margin agreements with each group. They apply to the fiscal year 2003, which is literally the day after tomorrow. We derived these targets from comparisons with our competitors, from expectations of the capital market, and from analyses of our own potential. These margins – measured as a ratio of earnings before income tax to sales – range from 4-6% for Industrial Solutions and Services, to 11-13% for Automation and Control, as well as Medical Solutions. Taking our groups and operations as a whole, we have an earning before income and taxes trend in the range of +20% a year” (von Pierer, speech, June 13, 2001)
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It was particularly intriguing to examine where the emphasis on long-termism in generating generic strategies came from. In ascertaining the case-study evidence, it became clear that shareholder expectations were the driving force behind sustaining generic strategies, even in the face of deteriorating market performance (direct observation, November 14, 2001; Mirow, interview, September 26, 2001). It furthermore appeared that while the influence of capital markets on strategy-making behavior was considerable, Siemens was also reluctant to succumb to them:

“...let me make one thing clear here: I receive considerable tips, advice, recommendations and good council [from analysts]... Some of it is obviously delivered in undertones that are intended to generate a certain pressure. I listen closely to these opinions.... But, in the end, things will remain as they are: our company will not be managed by analysts. We can do that ourselves. And the analysts have in the meantime largely accepted this fact. In fact, some even manage a strained smile when I say we are so successful because we did not follow much of the analysts’ advice, but followed our own course” (von Pierer, speech, June 21, 2001).

Nevertheless, the effect of shareholder expectations seemed to be a driving force behind the discrimination of generic strategies in order to achieve targets once set:

“The growing influence of financial markets on corporate governance is another phenomenon. This may not be news in the Anglo-Saxon business world, but it is a huge challenge in other regions” (von Pierer, speech, June 19, 2000).

Discussion: Considerable evidence of generic strategies (Porter, 1980, 1985) was found, whether in the case of cost, differentiation, or focused strategies. Both the literature-based part, as well as the empirical part emphasized the long-term nature of these strategies (Campbell-Hunt, 2000; Porter, 1996). This is perhaps not surprising, given that Porter’s generic strategies are widely accepted in the business world. Particularly prominent was Siemens’ focus on extending the current strategy. This was consistent with authors such as Porter, who emphasized that the key ingredient in the generic strategies concept “is a matter of discipline” (Porter, 2001: 70). The theoretical framework argued that a distinguishing feature of descriptive imagination in strategy making is its propensity to focus on a ‘disciplined’ extension of the current
strategy - in line with the descriptions of the environment formed through experience or analysis (Roos and Victor, 1999). However, the empirical evidence also added a valuable new insight, in that the driving force behind the sustenance of generic strategies once formulated can be seen in the influence of financial markets and shareholder expectations on strategy making. While there was evidence that the Siemens company attempted to minimize the influence of shareholder expectations on strategy making, it became clear that the very nature of the three key projects investigated was geared towards satisfying shareholder expectations.

5.3.2. Cultivating competitive angst

Cultivating competitive angst was widely practiced at Siemens. All three programs investigated (the Top Plus Program, the Ten Point Program, and Operation 2003) cultivated competitive angst (Mirow, interview, September 26, 2001; direct observation, October 23, 2001; von Pierer, speech, February 22, 2001). The perhaps most dramatic evocation of Siemens’ adopting this imagination lever was found in a speech by von Pierer:

“New competitors are popping up virtually overnight.... [C]ompetition is taking on dimensions no one could have imagined a decade ago. It started out as a wind, became a storm, and is developing into a hurricane” (von Pierer, speech, June 19, 2000).

While competitive angst was cultivated in many areas, including cost positions, innovation capacity, turnover figures, and revenue growth margins (direct observation, May 16, 2001; Schoss, interview, November 21, 2001), it was mostly used as a means to alert corporate managers to Siemens’ working capital situation vis-à-vis competitors. As was discussed earlier on, the Top Plus Program featured a specific module titled ‘asset management’ that was geared towards reducing the amount of working capital in the different business units (this was discussed in the section 5.2.1). While performance in asset management was measured against differentiated targets (asset intensive industries such as the Transportation Systems business unit, which was building trains, would naturally require higher working capital than, for example, the consulting business unit would), the overall asset-management situation was considered unsatisfactory at the time of the field study:
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“... the asset management situation hasn’t fundamentally improved to date..., but in fact has worsened on a comparable basis [with our competitors]... we will have to approach the situation in a different way. And we will have to do so because the circumstances today make this more imperative than ever. Why aren’t we making progress despite the good intentions and initiatives?.... [L]ook at any of the competitors where such ‘sins’ are not tolerated.... Why can’t we make progress in asset management without these crisis situations?” (Neubuerger, speech, June 21, 2001).

The tool traditionally used at Siemens for cultivating competitive angst was benchmarking.

“Siemens was never afraid to benchmark against the best.... This leads to a sustained competition for the best processes and business models. We have benchmarked 85% of our costs on corporate level against best-in-class partners. We then developed appropriate measures to analyze problem areas and to come up with solutions within the Top Plus Program” (Wucherer, interview, January 12, 2001).

In a benchmarking project in the Industrial Automation and Control division, for example, a serious cost gap relative to the division’s major competitor Mitsubishi was revealed. Competitive angst was cultivated by extrapolating that this cost gap could quadruple within the space of four years (Neubauer, interview, November 16, 2001). Siemens’ approach to nurturing competitive angst lead to achieving 108% of the target savings within three years. In other words, the cost gap relative to Mitsubishi had been closed (Wilhelm, interview, October 20, 1999).

Cultivating competitive angst was found to be particularly useful in divisions that traditionally enjoyed a good position and were therefore less inclined to respond to appeals for competitive angst. To illustrate: in the prosperous Industrial Automation and Control division, a substantial potential for cost savings was found in the purchasing department. The most important obstacles to overcome included the attitude shared by many employees that “we are the global market leaders, so we must be good enough” (direct observation, October 23, 2001). Competitive angst was needed so that the new ideas and proposals for cost cutting could be realized without prejudice and negative sentiments. The following quote by Guenter Wilhelm, member
of the corporate executive committee, illustrates the need and potential benefit of nurturing competitive angst even if, and especially if, cultivating competitive angst seems unfounded:

“In many of our business fields we are already better than our best competitors, in other words, we are a benchmark for other companies. This applies to 60% of our total business. But as a world-class company we should really be at about 80%. In order to determine our position in a given field, we have to conduct repeated benchmarking assessments that measure our performance against that of our main competitors” (Wilhelm, interview, October 20, 1999).

Discussion. The case-study evidence confirmed the importance of cultivating competitive angst. The notion of ‘instilling a fear of the hunted’ (Nasser and Vivier, 1995) featured strongly throughout the three key projects investigated. It should moreover be appreciated that Siemens was cultivating competitive angst not only in business units, which were in a difficult situation, but primarily in those that were doing well. Authors such as Nasser and Vivier (1995: 33), and Hamel and Prahalad (1994a) recommended this pro-active approach.

Furthermore, in line with the theoretical framework, it was found that cultivating competitive angst does not necessarily mean that competitive angst should be cultivated in all areas, but should be focused on selected areas. The area that was most heavily used for cultivating competitive angst was asset management, or driving down the amount of working capital, because this was an area where the company had to achieve a position superior to that of competitors. This finding is consistent with the conjecture in the theoretical framework that suggested that cultivating competitive angst implies a conscious decision to differentiate (a) areas where the company must remain superior to competitors, (b) areas where the company would accept the possibility of being on par with competitors, and (c) areas where the company would accept the possibility of being at a disadvantage vis-à-vis competition (Gupta, 1994: 93).

5.3.3. Creating a fit with the environment
The notion of creating a fit with the environment was a recurring theme throughout various media in the case-study evidence (e.g. von Pierer, speech, February 24, 2000; participant observation June 1-3, 2000; Siemens World, Volume 4, 2001;
“... deregulation, privatization and globalization trends are creating an entirely new business environment for our customers, and for us as well.... To survive in this emerging arena, you must act, not react. Our strategy centers on innovation and growth. These two pillars, combined with targeted improvements in our business, will help us achieve the productivity gains necessary for the new business environment” (von Pierer, speech, February 19, 1998).

At the time of the field study, the notion of creating a fit with the environment was acute. Following an outstanding performance in the fiscal year 2000, Siemens started the year with great optimism. Several interviewees noted that the company was caught up in the general market euphoria (Spangenberg, interview, December 5, 2001; Mirow, interview, September 26, 2001). In particular, it seemed that in the age of the Internet, economic cycles were a relic of the past. Perhaps as a result of this belief, the company’s growth curves of fiscal 2000 were extrapolated to the plans of the following year. Since then, however, Siemens has had to substantially scale back its expectations and, at times, make serious cutbacks in the plans of the overall company and some of its business units, most notably the Information and Communications business units (von Pierer, speech, June 21, 2001). Under these circumstances, the chairman of the supervisory board characterized Siemens’ clear commitment to creating a fit with the environment as follows:

“The quality of a company and its management can be seen in how early they spot negative – and positive – deviations from their plans and forecasts, and how rapidly they plan and implement adjustments to the new situation” (Baumann, speech, June 21, 2001).

In various media the field study evidence consistently found emphasis that a very important measure to create a fit with the environment is

“Agility in planning and logistical systems. A problem practically all contenders in the telecommunications industry have been struggling with is the inflexibility of their planning and logistical systems.... Particularly difficult is emancipating oneself from the constraints of past planning figures. One of our
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competitors, for example, kept up turnover figures by simply delivering more products to the retailers, resulting in tremendous write-offs, because the market for these products had gone” (Spangenberg, interview, December 5, 2001).

In various instances the case-study evidence furthermore emphasized a number of constants that stood behind Siemens’ commitment to create a fit with the environment (Baumann, speech, June 21, 2001; von Pierer, speech, June 21, 2001; Mirow, interview, September 26, 2001). These commitments were:

- Siemens would continue to be a pure electrical engineering and electronics company, one with a portfolio that is broader than most of its competitors.
- Siemens’ technology base is as broad, and all business units should profit from this diversity. The key here lay in the area of information and communications technology, which had penetrated all sectors in which the company was active.
- All groups should furthermore profit from Siemens’ worldwide presence, and from the broadly distributed regional value creation and its comprehensive global sales network that enabled the company to keep close to its customers.
- Finally, all groups should profit from the strength of the Siemens brand that should open doors and ensure a feeling of confidence and trust among the company’s customers.

At the time of the field study, the company was focusing on the task of adjusting its activities to a changed business climate, particularly in the Information and Communications sector. To accomplish this, Siemens focused its energy on minimizing deviations from its original targets and ensuring that it reached its medium-term targets in the fiscal year 2003 (Operation 2003). This was particularly pressing, since Siemens had communicated these targets to and awakened expectations in the capital market and public (Baumann, speech, June 21, 2001). This suggested that the very nature of Operation 2003 was geared to re-establish a fit with the environment (Siemens World, Volume 4, 2001).

Discussion: There were both similarities and differences between the case-study evidence and the theoretical framework. On the one hand, there was clear evidence that Siemens used the notion of creating a fit with the environment (Baumann, speech, June 21, 2001). The very strategy of the company centered around pinpointing deviations from original plans in creating this fit. The case-study evidence also
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reflected a specific causality that was mentioned by several scholars: environmental conditions determine structure (Zajac et al., 2000: 430). As Miles and Snow illustrate: “the process of achieving fit begins with, conceptually at least, aligning the company to its market-place... this process of alignment defines the company’s strategy” (Miles and Snow, 1994; cited in Zajac et al.: 2000: 429).

The case study found insufficient evidence to judge whether, and to what extent, the attempt to create a fit with a changing environment determined the corporate structure, particularly in the Information and Communications sector that was adversely affected by rapidly deteriorating business conditions in the sector it served (Miller, 1990, cited in Johnson, 1994: 421). For example, it was not clear at the time of the field study, whether Siemens would divest its ‘core business’ Information and Communications as the company did with the semiconductor business (now, Infineon) under similar conditions. Clearly, further longitudinal study is needed to examine further developments in Siemens’ approach to creating fit with the environment over time.

6. Creative imagination in strategy making
The former section focused on one important thrust in strategy making, namely descriptive imagination. The present section (a) presents and (b) discusses the empirical findings as they relate to another important thrust in strategy making, namely creative imagination. As was customary in the previous section, the empirical evidence is imparted as it applies to the three generic steps in the strategy-making process: envisaging, conceiving, and realizing imaginative strategies.

6.1. Step one: Envisaging imaginative strategies
This section presents and discusses the empirical evidence pertaining to three imagination levers: concentrating on core competencies, propagating strategic intent, and transcending competitors.

6.1.1. Concentrating on core competencies
The Top Plus Program, as well as the Ten Point Program featured a special pointer dedicated to concentrating on core competencies. Von Pierer emphasized:
“By focusing and combining the unique and unbeatable array of competencies within our company, we will keep the competitive edge” (von Pierer, speech, February 22, 2001).

Von Pierer’s emphasis on concentrating on core competencies was very evident throughout the data sources consulted in the field study. Indeed, the different business units of Siemens were referred to as core competencies particularly in the interview data. To illustrate: when asked what the core competencies of Siemens were, interviewees at corporate level would consistently name Siemens’ business units (e.g. Schwair, interview, December 13, 2001; Stuckenschneider, interview, November 22, 2001; Mirow, interview, September 26, 2001).

A key task in concentrating on core competencies, which was emphasized consistently in various media throughout the case-study evidence, was that of harmonizing multiple technologies. Von Pierer commented on the harmonization of technologies as follows:

“[o]ur synergies come from the cross-industry technologies used throughout our operations. Information and communications technology specifically is increasingly penetrating and networking all our groups. I see our expertise in Information and Communications technology as an enormous competitive advantage, since no other company in the world enjoys an equally strong position” (von Pierer, speech, February, 22, 2001).

As the quote suggests, Siemens paid particular attention to the networking of core competencies within the individual units, as well as across units. The notion of networking core competencies represented a recurring theme in the field study (e.g. Dachs, interview, February 14, 2000 & November 8, 2001; Spangenberg, interview, February 10, 2000 & December 5, 2001; participant observation, June 1-3, 2000; direct observation, October 13, 2001; Davenport and Probst, 2000), and is epitomized in a quote by the CEO:

“[T]here’s another ingredient... that I’d like to call the idea of networking. Supported by the spread of digitalization in electronics, our components, products and plants are increasingly being networked into complete systems. This is happening across all our business activities. Our broad spectrum of
knowledge enables us to overlay these physical networks with networks of knowledge. We are putting this networked knowledge to use across all of our activities to benefit our customers... We are the leading systems house for complex projects that require a combination of hardware, software, and services” (von PIERER, speech, February 18, 1999; emphasis added).

The instrumental role of the multidivisional firm and the synergies between the divisions in the context of networking was highlighted in various media throughout the case-study evidence:

“We intend to use our unique combination of competencies to develop strengths and customer attractiveness.... You can call it synergies if you like, but whatever the case, customer benefit is the result. This explains why we have no intention of breaking up the consolidated competencies that make Siemens strong and unique. Regardless of the motive behind them, all recommendations to split Siemens into individual companies – some even speak of dismantling the company – are out of the question. In our special constellation, one plus one is more than two” (von PIERER, speech, 1997; emphases added).

The conjecture that the portfolio of Siemens’ business units was key in identifying and nurturing core competencies was frequently heard in the case-study evidence. While Siemens operated in a broad field of electronics and electrical engineering, its focus was on those fields where it had a genuine chance of gaining and keeping a leading position in the global market, and in which profit from the company’s broad spectrum of competencies could be captured. The core competencies on which Siemens wanted to concentrate were predominantly in the realm of the engineering of major software packages, the application of microelectronics, and expertise in information technology networking (e.g. Klostermeier, interview, January 31, 2000; direct observation, October 23, 2001; participant observation, June 1-3). In concentrating on core competencies, the aim was to develop as many end products as possible from an existing organizational knowledge base (Krause, interview, November 12, 2001). The head of the Top Plus Program at Siemens emphasized the role of recombining existing core competencies to create new products:
“Trend-setting is not about upgrading version 3.1 to version 3.2, but about discontinuous innovation.... In doing this, we are focusing on Siemens portfolio of core competencies and try to discover new ways of combining these competencies to take create new markets” (Neubauer, interview, November 12, 2001).

The field study also showed that a fundamental challenge in concentrating on core competencies revolves around delineating ‘core’ from ‘non-core’ competencies (Krause, interview, November 12, 2001; Mirow, interview, September 26, 2002; direct observation, March 7, 2001). Siemens was doing this by drawing so-called ‘knowledge maps’ as part of the Top Plus Program. These knowledge maps illustrated where in the company which expertise was located (Klementz, interview, November 20, 2001). The challenge in deciding what ‘core’ competencies were, and where they resided, was illustrated by the difficulty in deciding what ‘best’ practices within the Siemens corporation were. The head of best practice sharing in the Top Plus Program described this process as follows:

“Identifying core competencies is... about checking where in the corporation the best solution for a problem resides. This solution does not always have to be a new solution, but the solution has to be new in the context in which it is applied.... [T]wo years ago, the Top Plus award was won by the local company in India, using a methodology that was developed in Germany 15 years ago. Reapplication of this solution to the local company in India, however, created enormous leverage. This means that in identifying core competencies, the target context is what matters” (Krause, interview, November 12, 2001).

To address the important task of identifying core competencies, Siemens developed a specific approach: the Top Plus module ‘best practice sharing’ that featured a so-called Best Practice Marketplace, in which the definition of what ‘best’ practices constitute was negotiated through supply and demand (direct observation, December 1, 2000; Krause, interview, November 12, 2001). A Best Practice Marketplace provided documented knowledge and pinpointed topic-related bearers of know-how in the company. This Marketplace made it possible for anyone either supplying or looking for practices, to find one another via project documentation (Krause, interview, November 12, 2001; Davenport and Probst, 2000; Klementz, interview, November 20, 2001). To illustrate: the person offering a practice described:
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- The problem,
- the problem-solving approach,
- the solution process,
- the critical success factors,
- the expense involved, and
- the results.

The addresses of contacts that could be consulted in the case of queries completed the input. Employees looking for a practice could present queries or publish them on the Marketplace if their search was unsuccessful, or if they felt that their solution was better than the one already published (Krause, interview, November 12, 2001; Franz et. al, 2002).

Interviewees explained that asking the employees to share their ‘best’ practices was, however, often met with much resistance. The case-study evidence showed that many employees did not have the confidence to contribute their normal, everyday work processes and experiences as ‘best practices.’ It was therefore necessary for all participants in best practice sharing to understand that naming an experience a ‘best practice’ may be done by the original contributor, but is more likely to be done by a ‘re-user’ of a variation, or similar application, of the original contribution (direct observation, March 7, 2001; Krause, interview, November 12, 2001). Thereby, through constantly negotiating, and re-negotiating what constituted ‘best’ practices at Siemens, Siemens’ core competencies could be delineated (Davenport and Probst, 2000; Krause, interview, November 8, 2001).

Discussion: There was a very good fit between the theoretical framework and the field-study data. The main conjectures made in the theoretical framework were validated. For illustration: first, Siemens focused mostly on knowledge in the form of best practices as the most critical of core competencies, which is in line with the literature (e.g. Grant, 1996, 1997; Spender, 1996a,b). Siemens also evidenced that it did not fall into the trap of mistaking core competence as simply another word for technology. The literature emphasizes the possible mistaking of core competence as just another word for technology as the most important drawback in concentrating on core competencies (Prahalad et al., 2001: 243). The case study evidence showed that Siemens understood that core competencies required not only expertise in several technologies such as microchips, miniature power sources, and user-friendly design,
but also in governance processes that are needed to foster the harmonization of these different technologies (Prahalad, Fahey, and Randall, 1994: 262).

Perhaps the most interesting finding was Siemens’ approach to the definition of what core competencies were using the approach of a Best Practice Marketplace. This approach should be seen as a new and innovative interpretation of the suggestion that core competencies should pass three tests: they should be rare, inimitable, and valuable (Hamel, 1991: 83, see also Prahalad and Hamel, 1990 Wernerfelt, 1984; Barney, 1991), in that it forced Siemens employees to constantly re-negotiate the three tests for core competencies as mentioned in the literature (see Hamel and Prahalad, 1990). Siemens’ approach of using a Best Practice Marketplace for identifying core competencies should therefore be seen as a valuable addition to the existing literature.

6.1.2. Propagating strategic intent
As von Pierer’s quote below foreshadows, propagating strategic intent featured strongly in the case-study evidence in all three projects investigated.

“Innovation... ultimately means spotting new technology trends, new business concepts, new opportunities ahead of the competition. It literally means seeing the future – and shaping it. I like to think this strategy is similar to the one used by Wayne Gretzky, probably the greatest hockey player in history. When he was asked about his secret for leading the National Hockey League in goals year after year, he replied: ‘I skate to where the puck is going to be, not where it has been’” (von Pierer, speech, June 19, 2000; emphasis added).

In recognition of the need to actually visualize a strategic intent, or ‘a look into the future’ (Krubasik, June 13, 2001), Siemens launched a new publication called ‘Pictures of the Future’ as part of the Top Plus Program. In this publication, the corporate technology department, in collaboration with the individual business units, had developed a tool for propagating strategic intent throughout Siemens. Pictures of the future were studies presenting Siemens’ technological visions and strategic intent for five corporate key areas: Information and Communications, Automation and Control, Power, Transportation Systems, and Medical Solutions (Gerstenmayer, interview, December 4, 2001; also discussed previously, in section 5.1.2. on ‘diagnosing industry dynamics’).
A common denominator underlying all five corporate key areas was substantially increasing the service business on an unprecedented scale (i.e. to over 50% of the total revenue). To illustrate: at the time of the research, services accounted for over 15 billion Euros in sales, or 25% of the company’s total (von Pierer, speech, February 22, 2001). The reason for this increased emphasis on services was that services required far less net capital employed than manufacturing-generated income. The Information and Communications segment led the way in creating new market space, with services accounting for 30% of its sales (Krause, interview, November 12, 2001; Dachs, interview, November 8, 2001; direct observation, October 23, 2001). At the time of the field study, a so-called ‘Service Board’ was in the process of being set up on corporate board level in order to offer top management support to the increasing activity in the service sector (von Pierer, speech, June 13, 2001; Berner, interview, January 7, 2002). A senior manager from the Transportation Systems business summarized the situation as follows:

“[W]e had to increase the service business on an unprecedented scale. Turning service into more than 50% of the overall value added of a given deal was certainly one of the most challenging goals…. Service is the key to success in Transportation Systems. Service business can be understood as a long-term partnership with the customer, in which we offer him everything he may need to keep the system running…. In particular, it involves ensuring RAMS, i.e. Reliability, Availability, Maintainability, and Serviceability. For example, to serve the needs of the market well, you must make a credible commitment to your customer that you, not he, will ensure that the train you delivered will be up and running for the next twenty years. Take the DESIRO24 concept in Great Britain – our biggest deal ever –if we hadn’t been able to offer 20 years of service as part of the deal, our competitor would have won the contract” (Zimmermann, interview, December 20, 2001).

The second key project investigated, the Ten Point Program in itself can be seen as the paragon of propagating strategic intent. It was developed from the need to make credible, but ambitious, statements of direction to the Siemens shareholders after a

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24 The ‘DESIRO’ concept was a modular train designed to meet the world demand for passenger rolling stock, in which flexibility, i.e. a choice of front ends to reflect customer image and satisfy operational requirements, flexible unit configurations and seating layouts to meet customer demands for both urban and inter-urban service, was key.
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period of deteriorating financial performance. In 1999, von Pierer announced at the Annual Shareholders’ meeting that Siemens would soon be “a different company” (von Pierer, speech, February 24, 1999). During the year preceding this announcement, analysts were becoming increasingly skeptical of the company’s value-generation potential. Some analysts were even demanding the break up of the conglomerate structure of Siemens, believing that the value of the sum of its parts would be greater than the total value (von Pierer, February 24, 1999). The Ten Point Program was then launched as a set of concrete measures to re-establish the trust of the analysts. One of the ten points, in particular, reflected the strategic intent of the company: the listing on the New York Stock Exchange and the conversion of all accounting measures to the U.S. GAAP system as a prerequisite for this listing.

The company presented selected key figures under the U.S. GAAP accounting standard for the first time at the end of fiscal 2000. Starting with the fiscal year 2001, all financial reporting was to be in accordance with U.S. GAAP. The conversion was not only a prerequisite for listing on the New York Stock Exchange, it also made financial reporting much more transparent and enabled a direct comparison with competitors. The Siemens shares were traded on the New York Stock Exchange from March 12, 2001. With its Wall Street listing, the company had underscored the importance it attached to the U.S. market and obtained an additional acquisition currency for possible purchases. To illustrate this importance: the U.S., where Siemens had sales of $25bn, and over 90,000 employees (almost a quarter of its entire workforce), was the company’s single-most important market. In fact, Siemens was the largest foreign investor in the U.S. in the field of electronics and electrical engineering (von Pierer, speech, November 14, 2001).

Finally, as part of Operation 2003, the company propagated the strategic intent of moving all its business operations into leading positions. At the time of the field study, this intent focused mainly on the Information and Communications business units. As the assistant to the CEO of the Information and Communications business unit succinctly described:

“Analysts are convinced, and perhaps rightly so... that Siemens’ share price is a function of the Information and Communications segment. The idea at Information Communication Networks is not about restructuring an ailing business unit, the idea is to put the entire Siemens ship back on course – while
mending a few rusty patches, of course” (Berner, interview, November, 15, 2001).

The strategic intent was to achieve either *number 1 or number 2 positions* for the Information and Communications businesses, since only businesses in top competitive positions posted long-term earnings that exceeded the cost of capital. As part of Operation 2003, the company had compiled statistics that showed that only businesses in top positions could achieve the aim of earnings that exceeded the cost of capital. Businesses in number 3 positions could often not earn their cost of capital over the long term. The strategic intent was therefore clear: the groups in the Siemens portfolio had to do everything they could to put their businesses into leading positions and keep them there (von Pierer, speech, February 24, 2000; von Pierer, speech, November 14, 2001; direct observation, October 23, 2001; Siemens World, Volume 4, 2001).

An interesting new insight that emerged in the case-study evidence related to the barriers to successfully propagating strategic intent. In an interview with the former head of Information Communication Networks Sales Germany, it became clear that the key stumbling block in propagating strategic intent was the sales force:

“If sales representatives have the opportunity to revert to selling the product they are used to, they will do so. This can be a problem, because you will find it difficult to push your new products. How does one remedy this situation? There is no ‘silver bullet’ answer to this problem. If you prevent your sales force from selling the old products, for example by adjusting motivation and reward systems, your core business goes down the drain, and with it an important source of cash for financing the fledgling business. However, if sales reps do have an option, they will continue selling the old product” (Spangenberg, interview, December 5, 2001).

**Discussion:** There was an excellent fit with the theoretical framework. Both the general, literature-based part as well as the specific, empirical part emphasized that a clear commitment was needed for the exact opposite of downsizing and ambitions to fit available resources. Instead, at the time of deteriorating firm performance in 1998, and again in 2000, Siemens did the exact opposite, namely *nurturing ambitions that were out of all proportion with existing resources*, and focused on seemingly unattainable goals. This orientation is consistent with recommendations by scholars
such as Hamel and Prahalad (1994a), as well as Kim and Mauborgne (1997a, 1999a,b). Furthermore, the clear emphasis on revenue increase, rather than cost-cutting and downsizing, in the case-study evidence should be seen as an empirical illustration of Hamel and Prahalad’s idea of ‘numerator management’ (Hamel and Prahalad, 1994a: 125). Finally, in line with the recommendations in the literature, Siemens largely abandoned the ‘feasibility sieve’ (Hamel and Prahalad, 1989: 66), which other companies often seem to use for matching emerging opportunities with existing resources. This was evidenced in the strategic intent to increase Siemens’ service business to over 50%. Finally, an unexpected new insight showed that a key deterrent in propagating strategic intent can be the sales staff. This was in contrast with the existing literature, where sales staff, due to its being closest to the customer, is typically portrayed as a driving force, rather than as a constraint, in propagating strategic intent.

6.1.3. Transcending competitors

Transcending competitors through innovation had a long tradition at Siemens, as the following quote by Siemens’ founder, Werner von Siemens shows:

“A key reason for the blossoming of our factories lies in using our own innovations as their basis.... This approach has never failed to enable us to be quicker than our competitors. This advantage usually persisted until we managed to get even further ahead by continuous improvement of our innovation” (von Siemens, 1966: 324).

In the field study, particularly as part of the Top Plus Program, transcending competitors was a key imagination lever for Siemens. By contrast, the Ten Point Program and Operation 2003 exhibited transcending competitors to a lesser degree and sometimes even emphasized the need to ‘catch up with competitors’ (von Pierer, speech, November 14, 2001), rather than to transcend them.

In the Top Plus Program, however, the case-study evidence demonstrated a firm commitment by Siemens to transcend competitors not only on the level of end products, but also on the level of core products, and core competencies (Spangenberg, interview, December 5, 2001; Raffler, interview, December 6, 2001; direct observation, October 23, 2001). This became evident from the differentiated way in
which Siemens managers understood the word ‘competition.’ A member of the board defined competition as follows:

“Today, competition means innovation and productivity competition in many areas of business. We’re ahead of technology and market share, for instance, but in many others, unfortunately, we’re not yet up there with the best in efficiency, design to cost, and profitability” (Krubasik, interview, January 9, 1999).

Transcending competitors often went hand in hand with drafting unique selling propositions in a radically new way. This observation could be triangulated, using a variety of case study media (e.g. Spangenberg, interview, December 5, 2001; Haussmann, interview, December 12, 2001; direct observation, October 23, 2001). However, it also became obvious that the basis for transcending competitors need not necessarily be a radical innovation. The following quote by the Top Plus Program manager at Siemens Medical Solutions was exemplary for this insight:

“Drafting unique selling propositions does not always have to entail radical innovations. In innovating our products, we did not go for a radical approach. Instead, we enhanced existing product features. As an example, a new technology made it possible for our magnetic resonance systems to operate three times quicker. For our customers, this was a radical improvement of their workflow process. It meant that they could treat many more patients in a much shorter time than ever before.... To find these areas where radical improvements of customer value are possible, we often have to innovate around the core-functionality of the product” (Haussmann, interview, December 12, 2001).

In transcending competitors, a recurring theme in the case-study data was to ruthlessly adopt the perspective of the customer in order to discover whether a new product would actually be superior to the old, and would consequently provide superior value (Spangenberg, interview, December 5, 2001; participant observation, June 1-3, 2000). An interesting example of adopting the customer’s perspective in transcending competitors was emphasized later in the same interview with the Top Plus Program manager at Siemens Medical Solutions:
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“...we looked at exiting products from the customer perspective. While this may sound trivial, it is not. Usually, in medical solutions, you look at it from the technological perspective.... What we did was ask our customers: ‘what would you want from us if you knew what is technologically doable.’ The result of this was sophisticated magnetic resonance systems that did not use the traditional tunnel-technology, but instead used an ‘open’ design. The result: patients did not feel as claustrophobic, and our direct customers, the medical doctors, were happy” (Haussmann, interview, December 12, 2001).

Different interviewees, however, also consistently emphasized a downside to listening to the customer. The common denominator in these interviews was that often the customers themselves do not know what they want, and hence listening to them in order to find out how to best transcend competitors can lead to the wrong conclusions (Spangenberg, interview, December 5, 2001; Haussmann, interview, December 12, 2001). In the words of a senior development manager at the mobile phones business unit:

“...we must ask ourselves, why do we consistently walk in one direction once we have taken this direction?.... Part of the story is the customer. Like us, the customer is trapped in walking into the same direction he’s always walked” (Schneider, interview, November 14, 2001).

Thus, the case-study evidence showed that listening to the customer in transcending competitors was a double-edged sword (Spangenberg, interview, December 5, 2001). The former head of Sales Germany of Information and Communications Networks offered the solution to this problem:

“In building innovation capability, you may also talk with customers.... However, you need to talk to the right people. All too often when sales representatives talk to their customers, they take the lift downwards – to the cellar, where the technicians sit. Instead, they should take the lift upwards, to the top floor, where management sits.... Technicians are often deeply preoccupied with upgrading existing technology, rather than thinking around the existing technology. More often than not, you get the wrong idea of what the customer really wants or what is good for the customer from only listening to technicians” (Spangenberg, interview, December 5, 2001).
Discussion: Both the literature-based framework, as well as the empirical case-study evidence emphasized the importance of transcending competitors as a complement to catching up with them. The case-study evidence is an accurate reflection of the work of scholars such as Hamel and Prahalad, who argued that infatuation with competitors could lead to an inappropriate reflection of reality. In anticipating the moves of existing competitors, companies’ focus on existing resources of present competitors (Hamel and Prahalad, 1994a: ix; Hamel and Prahalad, 1989: 64). The theoretical framework argued that this behavior could lead to imitative, rather than imaginative strategies, particularly when companies accepted what competitors were doing and strove to do it better. However, according to Hamel (2000), the question is not one of getting better, but one of getting different. The case-study evidence showed that getting different was best accomplished by listening to customers, rather than trying to catch up with competitors. However, listening to customers can be a double-edged sword in that customers themselves are often trapped in existing ways of doing things, and are disinclined to accept new products. This observation is in line with the work of scholars such as Kim and Mauborgne (e.g. Kim and Mauborgne, 1999a,b), which was incorporated into the theoretical framework.

6.2. Step two: Conceiving imaginative strategies

This section presents and discusses the case-study evidence as it relates to the three imagination levers redefining the industry structure, leveraging internal resources, and building the intelligent enterprise.

6.2.1. Redefining industry boundaries

The theoretical framework outlined three bases along which industries can be redefined: capacity-driven industries, customer-driven industries and knowledge-driven industries. The industries Siemens competed in can best be described as knowledge intensive. To quote von Pierer:

“Between 60 and 80% of the value added we generate is linked directly to knowledge – and the proportion is growing” (von Pierer, cited in Davenport and Probst, 2000: 3).

In emphasizing the importance of knowledge as a key value-adder, Siemens made a clear commitment to looking at the resource-side in redefining industry boundaries
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(Dachs, interview, November 8, 2001). The central question in redefining industry boundaries at Siemens was: – are the current businesses an adequate reflection of the market needs, buyer preferences, and technological requirements? (Stuckenschneider, interview, November 22, 2001; Siemens Welt, Volume 1, 2001; Ganswindt, interview, November 29, 2001). The case-study evidence demonstrated that often customers, and in particular corporate customers, would not pay heed to the definition of industry boundaries, but would instead demand highly integrated solutions that often cut across several of the industries served by Siemens. The theoretical framework called this ‘blurring industry boundaries,’ and this tendency could also be observed in the case-study evidence:

“Blurring of industry boundaries is happening on a large scale in the Information and Communication sector. It’s called TIME. Time stands for Telecom, Internet, Media, and Entertainment. In a couple of years from now biology will also form part of this.... In fact, the very notion of Information and Communications as a business unit combining two formerly separate areas at Siemens is an illustration of blurring industry boundaries” (Berner, interview, November 15, 2001).

Given the blurring of industry boundaries, Siemens managers considered it expedient not to define industries too narrowly. To cite a colorful evocation of this point by the assistant to the CEO of the Information and Communications business unit

“Industry boundaries are an elusive concept. I quite like Jack Welch’s approach of not drawing the boundaries too closely. First to keep employees from relaxing, because they think they can clearly define the environment they are operating in and thereby ignore other important environments. Second, if ‘industry’ is defined more loosely, my scope of perception is widened too, and I am more sensitive to developments in related industries that might have an impact on my own industry. If we only think in terms of telephony networks, and nothing but the network, we have a problem. No question: it’s good to think about the developments of networks, how existing networks can be improved, and can be made more efficient and customer-friendly. But if we do this, we fail to realize forces that impact the network as such. That’s the ‘frog’s perspective.’ I see the net and nothing but the net. What I see is the number of data bits that gets transported, I wonder how more data can get transported and
that kind of thing... I don’t grab the steer by its horns, all I do is perhaps get hold of its tail” (Berner, interview, November 15, 2001).

In redefining industry boundaries, the common denominator across the industries Siemens competed in was the knowledge needed by the individual business units (Klementz, interview, November 20, 2001; Davenport, interview, May 31, 2000). Siemens, as part of the Top Plus Program, started an initiative that attempted to redefine industry boundaries irrespective of the traditional industry definitions, and markets served. This initiative was called ‘Knowledge Strategy Process.’ It was an instrument for determining strategy and action plans that were based on an assessment of the knowledge needed to deliver customers with an integrated solution, irrespective of the industries that were involved in putting this solution together (Klementz, interview, November 20, 2001; Berner, interview, November 15, 2001; Hofer-Alfeis, interview, November 21, 2001).

The Knowledge Strategy Process methodology redefined industry boundaries by using the concept of ‘knowledge areas,’ rather than using the served industries. Knowledge areas were clusters of product and process skills that typically cut across business units and their industries. These knowledge areas were categorized in terms of their proficiency, codification, and diffusion. Proficiency referred to the abilities, skills, and the expertise needed to build a solution. Proficiency was considered to be always tied to a person. By contrast, the second category for knowledge areas, diffusion, reflected to what degree abilities and expertise were distributed across the organization and across the individual industries, and how the processes for such distribution and networking were functioning. The last category for knowledge areas was codification, which conveyed to what extent and in which media knowledge was documented or recorded. Knowledge areas could address markets, products, technologies, materials, components, as well as processes (Hofer-Alfeis, interview, November 21, 2001). Redefining industry boundaries using the Knowledge Strategy Process methodology was done by answering four questions (Davenport and Probst, 2002: 31):

- The first question was: what is the most significant business perspective for the near future? This could be a product line, a process innovation, a business, or an organizational transformation. It aimed at identifying the most relevant business perspectives for the near future. The time frame for this was
contingent on the business unit, and the common cycles within this business unit. To illustrate: nuclear power plants (Building Technologies business unit) would have a longer time horizon than mobile phones (Information and Communications Mobile business unit).

- The second question was: which knowledge areas are significant for the business perspectives selected? In the Knowledge Strategy Process methodology, this question was answered in a brainstorming session with senior management, customers, and line-employees. The result was a list of 12 knowledge areas. For this process, a knowledge area constituted the various experiences, skills, and abilities. It touched upon considerations that ranged from whether a business unit had the know-how for developing energy-saving engines right through to its expertise in general project management.

- The third question was: what is the status of our knowledge areas and where can the company improve? This activity focused on the fitness of the knowledge areas in terms of the three dimensions (proficiency, diffusion and codification). The strategy-making team estimated the actual and target status along three key questions: Do we have an expert working in this area, if not, where can the expert be found (proficiency)? How well is the relevant knowledge distributed in the company, and how are the processes used for this distribution functioning (proficiency)? How is the knowledge documented, in reports, structured descriptions, and standardized forms, such as best practices?

- The fourth question was: what is our plan and how do we monitor progress? In the final step, it was decided how the individual knowledge areas identified in the previous steps could be structured to create synergies. During this process, managers from different units came together to brainstorm areas of overlap in the knowledge areas identified, and how this would impact their current industry definition.

Discussion. The case-study evidence as well as the literature-based theoretical framework demonstrated two important points. First, the importance of redefining industry boundaries and, second, the significance of knowledge as a basis for redefining industry boundaries. In particular, it should be appreciated that Siemens’ emphasis on the growing importance of knowledge (according to von Pierer, 60 to 80% of Siemens’ value added was directly linked to knowledge) underscores the conjecture made in the theoretical framework that in redefining industry structure, the strategy maker can look at the resource-side, rather than looking only at the product
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market-side. The significance of knowledge as a basis for redefining industry boundaries was consistent with the literature on which the theoretical framework was based (e.g. Hamel, 2000; Sampler, 1998; Collis and Ghemawat, 1994), and confirmed the conjecture of the strategy-making matrix that industry redefinition can best be accomplished by looking at the input, or resource-side, rather than at the output, or product market-side (e.g. Peteraf, 1993, Barney, Prahalad and Hamel, 1990). However, with the exception of Sampler (1998), no author was found who outlined a concrete, step-by-step methodology to accomplish the process of redefining industry boundaries. The literature consulted for the theoretical framework mostly emphasized the importance of redefining industry boundaries, but fell short of providing concrete recommendations as to how this can be accomplished. The empirical evidence (the four steps of the Knowledge Strategy Process methodology) must therefore be seen as a valuable new addition to the body of knowledge on re-defining industry boundaries.

6.2.2. Leveraging internal resources

All three projects investigated for this dissertation (the Top Plus Program, the Ten Point Program, as well as Operation 2003) strongly emphasized the need for leveraging internal resources. The key question in leveraging resources as outlined by the theoretical framework, ‘How can we exploit our limited resources effectively and efficiently?’, was corroborated in interviews, archival data, and direct observations (Neubauer, interview, November 16, 2001; Stuckenschneider, interview, November 22, 2001; direct observation, September 28, 2001; Siemens World, Volume two, 2001). The importance of particularly leveraging internal knowledge resources was strongly emphasized by von Pierer in various speeches. To cite one example:

“[O]ur knowledge-based activities will continue growing in importance. Ultimately our success will depend on the knowledge and capabilities of our managers and employees and how well we make this know-how available throughout our global Siemens network” (von Pierer, speech, December 11, 1997).

The rationale for leveraging internal resources was epitomized in the proverbial ‘if Siemens only knew what Siemens knows.’ The case-study evidence showed that a company employing more than 450,000 employees worldwide represented an enormous asset - the relationships that these people built with suppliers, customers, partners, governments and institutions every single day, constituted an internal
resource worth leveraging (Klementz, interview, November 20, 2001). However, the fact that these 450,000 people were dispersed over 190 countries also represented a challenge in leveraging this asset. It was clear that

“[t]here aren’t too many problems that one or the other of our eight business segments hasn’t already solved. Whether it’s installing a complete metropolitan subway system, constructing a pharmaceuticals plant on a turnkey basis or putting up an office tower with the latest building management and communications technology – you can bet that at least one of the more than 400,000 Siemens experts in at least one of the 190 countries where we are active has tackled the job before” (von Pierer, cited in Davenport and Probst, 2000:3).

Leveraging internal resources at Siemens was done to take advantage of the ‘law of increasing returns’ (Dachs, interview, November 8, 2001). For example, the number of business options, quality improvements, cost reductions and process optimizations could be increased, thanks to the repeated use of the knowledge of how to set up a complex telephone network, without requiring further major investment, and R&D costs (Krause, interview, November 12, 2001). Siemens Information and Communications Networks and the introduction of ShareNet, an Intranet-based knowledge-sharing platform provided a telling illustration for leveraging internal resources, particularly knowledge resources. Siemens Information and Communications Networks faced a significant increase in the complexity of its business, due to the deregulation of the telecommunications equipment supplier market. This deregulation resulted in an increase in new entrants to the market. On average these companies were far more entrepreneurial than the incumbents, highly sensitive to price, and insisted on rapid innovation. Their emphasis was on customized product and service packages, which were highly knowledge-intensive (Dachs, interview, February 14, 2000 & November 8, 2001).

This meant that Information and Communications Networks faced the challenge of having to lower costs and innovate new products and services simultaneously, at a pace not experienced previously. But the changing telecommunications landscape also brought new opportunities: while the new business reality threatened profit margins of the established business, it also opened up new business in the service- and knowledge intensive business which had much higher profit margins. To illustrate: the new
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entrants needed fresh business analysis and planning to accommodate the rapidly changing markets in which they operated, but many did not have the resources or experience to handle this. Most of them were also start-up ventures without sufficient capital to make cash equipment purchases, which led to their demanding new means of financing and innovative contracts. In the deregulated telecommunications market, a customer could therefore expect a supplier, like Information and Communications Networks, to provide most of the services involved in running a telecommunications-service business, including financing, business planning, engineering, and operation. The complex service and product packages that a telecommunications-services provider wishes to sell to his end-user have become known as ‘solutions’ (Dachs, interview, November 8, 2001; Klostermeier, interview, January 31, 2000; Davenport and Probst, 2000).

As a result, solution creation and solution selling became key competitive levers for Information and Communications Networks (Davenport and Probst, 2000). This meant that the individual sales representative at Information and Communications Networks had to effectively sit with the customer and develop an integrated solution for the customer’s business problem. The sales representative had to act more like a consultant than like a person simply selling a pre-packaged product or applications (Klostermeier, interview, January 31, 2001). One former sales representative reasoned:

“We will have to unlearn to think in packaged products and applications. The way we work together is the most important clue to success. Once we start negotiations about a new project with the customer, we quickly have to identify internal and external qualified people to build and operate these new businesses jointly with the customer. Because of the multifaceted knowledge needed, we have to learn how to source our knowledge from convenient sources. We have to get used to integrating internal and external know-how” (Klostermeier, interview, January 31, 2000).

The case-study evidence consistently demonstrated that Siemens could no longer simply rely on former product knowledge (Klementz, interview, November 20, 2001). Where in the past Siemens’ sales representatives in the Information and Communications business unit had often anticipated customer needs even before they had been articulated, they now had to guess, sense and discuss the complex needs of
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the new entrants to the telecommunications market. Doing so meant that the salesperson had to gather information about the new clients and develop in-depth knowledge about the customer’s way of doing business beforehand. Unlike their established customer who had placed orders in a relatively foreseeable way, these new customers had latent wishes that had to be leveraged (Davenport and Probst, 2000).

One interviewee illustrated this as follows:

“What we need most is intimate customer knowledge, especially knowledge about the customer’s economic branch. We have to make pro-active suggestions about where our customer’s business may go and in which field he may be operating within the next few years. To date we have only boarded the sales process when it comes to ordering products and applications. The challenge is to start discussions much earlier: We have to play the role of a strategy-management consultant who is able to interpret trends and to jointly design new business opportunities with the customer” (Dachs, interview, November 8, 2001).

It was clear to Siemens that the new consulting role would be far more time consuming and demanding than simply ‘moving boxes,’ as the product selling business was often called in the company (participant observation, October 16/17, 2000). Successful solution selling required that the organizational set-up and competencies needed to be geared towards purposefully identifying and quickly sharing relevant information and knowledge across markets around the world, and continually refining Information and Communications Network’s competencies to keep up with market developments. The goal was to detect local innovations and leverage them on a global scale (Klostermeier, interview, January 31, 2001; direct observation, October 23, 2001). In the words of von Pierer:

“Companies like Siemens have to exploit their expertise more systematically and more intensively than ever before” (von Pierer, cited in Davenport and Probst, 2000: 2).

The case study showed that a prerequisite for leveraging internal knowledge resources was the ability to transfer the explicit elements of knowledge that can be easily transferred, or stored in databases, as well as the more tacit elements of knowledge that arise from discussions and business development with a customer. Each of these
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types of knowledge elements demands fundamentally different transfer and management mechanisms. Interviewees emphasized that tacit knowledge is bound to the individual mind, and cannot be transferred without actually transferring the person. Knowledge codified in databases, manuals and project debriefs, however, can be transferred with relative ease (Dora, interview, February 13, 2000; Klostermeier, interview, January 31, 2000).

The aim of the ShareNet initiative for leveraging internal resources was therefore to focus on *explicit as well as tacit knowledge*. To accomplish this, ShareNet leveraged four kinds of knowledge.

1. Cognitive knowledge, or *know-what*, was defined as basic technical mastery and was achieved through extensive training and certification. For ShareNet this meant technical knowledge, for example in the form of pricing concepts, represented an essential, but insufficient, aspect to ensure commercial viability.
2. Skills, or *know-how*, referred to effective execution and application of abstract rules and regulations to the real-world context. ShareNet achieved this through the feedback given by sales professionals in de-briefing projects.
3. Systems understanding, or *know-why*, referred to a deep understanding of cause-and-effect-relationships underlying an experience. In a global sales and marketing context, this enabled professionals to anticipate subtle aspects in their interaction with a customer. This understanding was especially important in view of the increased complexity of the sales process. For example, an experienced key account manager would instinctively know which components of a solution can be developed further, be leveraged and re-deployed in other countries, or even be re-invented to suit different requirements. Systems understanding therefore represented a particularly important area of intervention.
4. Self-motivated creativity, or *care-why*, refers to active and caring involvement in a given cause. For ShareNet this meant systematically identifying and promoting highly motivated and creative groups of employees. Indeed, such groups often outperformed other groups with greater resources.

*Discussion:* The results from the field study can be seen as a case in point for leveraging internal resources. All conjectures made in the literature-based theoretical framework could be validated. To begin with, the theoretical framework outlined the
importance of leveraging in knowledge resources as the most important of the internal resources (e.g. Davenport and Prusak, 1998; von Krogh and Roos, 1995). As recommended by scholars such as Davenport (Davenport and Prusak, 1998, Davenport and Probst, 2000), and Leonard Barton (1995), there was a clear emphasis on tacit as well as explicit forms of knowledge in leveraging internal resources. Siemens’ approach to dealing with the challenges of transferring tacit knowledge was illustrated in the way in which the company’s platform for leveraging internal resources (ShareNet) dealt with four types of knowledge (know-what, know-how, know-why, and care-why). As recommended by knowledge management and strategy authors, leveraging internal resources at Siemens was a proactive move to take advantage of the changing market landscape (e.g. Porter, 1985; von Krogh and Roos, 1995; Collis and Ghemawat, 1994; Eisenstat and Beer, 1994).

The case study, furthermore, provided a detailed account of the changing market environment in telecommunications and outlined the implications this had for leveraging internal resources. In addition to this, there was evidence that Siemens ‘blended’ various knowledge bases in leveraging internal resources, which is in line with the theoretical framework (Prahalad and Hamel, 1990; Spender, 1996a). Finally, there was clear evidence that Siemens wanted to exploit the law of increasing returns (Arthur, 1996) in leveraging internal resources. Thus, ShareNet’s aim was to mobilize and transfer already existing knowledge resources and to re-apply these in a new context at virtually zero marginal cost, which is an exact reflection of the observations in the literature.

6.2.3. Building the intelligent enterprise

The theoretical framework outlined that a firm’s value chain is embedded in a system of interlinked value chains, sometimes called a ‘value system.’ This value system includes the value chains of suppliers of raw materials and components that are interconnected by ‘knowledge links,’ suggesting that building the intelligent enterprise means focusing on developing ‘best in world capabilities’ in selected activities (as described in the previous section), while outsourcing other, less critical, activities (as will be described in this section).

The vision that guided the Top Plus Program can best be described as a strong focusing of the organization on what it does best, while at the same time obtaining
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other resources and skills from partners (Lucks, interview, January 9, 2002). According to the head of the Information and Communications division:

“We are concentrating on our core competencies, while constantly replenishing them. At the same time, we are collaborating with external partners in situations of mutual benefit. For example, we are currently entertaining the thought of development partnerships for games to be used in mobile phones. In doing this, we are following a simple rule of thumb, and that is favorization of in-house production over co-option of external partners. In following this approach... we can learn from our partners and also become more agile in reacting to changes in the market environment” (Jung, interview, April 1, 2001).

Building the intelligent enterprise at Siemens was considered a key role in business development. In the course of the Ten Point Program, it became clear that in order to reach the overall performance objectives, Siemens still had to improve its market position in many businesses. The path of first priority was to carry out such improvements through ‘organic measures’ (i.e. leveraging internal resources), as this was considered to involve fewer risks than collaboration with external partners. Corporate development had analyzed that, based on the company’s overall sales volume, in 30% of Siemens’ business the necessary position improvements could not be reached by organic measures, which showed the strong need for collaborating with external partners. This applied to both dynamic growth markets, where the necessary speed could only be achieved by using mergers or entering local markets through acquisition of market shares, rather than by trying to enter through long-range price wars (Lucks, interview, April, 2001; Klementz, interview, November 20, 2001). Von Pierer emphasized in this context:

“We won’t dissipate our strength, but continue to build on it. This calls for ongoing pruning of our business portfolio to ensure competitiveness and growth. We will continue to grow from within, but also rely on acquisitions and divestments. We will give up activities that have better prospects with other partners or in other constellations.... We will continue to acquire other companies if they can strengthen the competitive position of our core business in markets and technologies” (von Pierer, speech, October 12, 1997).
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Knowledge assets, and the cost and speed with which they could be developed were considered a key criterion in deciding whether to follow the ‘organic’ or ‘external’ route of development. The Chief Knowledge Officer made this very clear in an interview:

“In managing knowledge, we need to make sure that we understand both what the knowledge is that we have and what critical knowledge assets we don’t have.... Once we have a good picture of our knowledge portfolio, what’s in, what’s missing, we can then decide what to do about the knowledge that is missing. Usually, the basis for making this decision is speed. Given the relentlessly increasing speed at which technology cycles change, speed is key.... Therefore, it often makes sense to co-opt the knowledge and capabilities of partners” (Klementz, interview, November 20, 2001).

Building the intelligent enterprise at Siemens revolved around partial ‘outsourcing’ of logistical risks to suppliers. For example, at the Automation and Control division, the plastic parts left room for improvement at the time of the field study. In the past, many of the plastic parts (such as screws, nipples, etc.) had been broken in transit and were unusable when they arrived at the production plant. The solution that was eventually developed foresaw that those parts that had to be assembled during production would now be purchased ‘ready-assembled’ from a single supplier. This would yield a saving of 500,000 Euro per year. Using this method, 108% of the target savings would be achieved within three years (Neubauer, interview, November 16, 2001, Siemens World, Volume three, 2001).

It also became clear in the case-study evidence that in building highly integrated solutions, i.e. complex packages of products and services, Siemens had to increasingly use external partners. This necessitated a re-thinking of what core competencies were (Klementz, interview, November 20, 2001; Lucks, interview, January 9, 2002; Berner, interview, November 15, 2001). The project manager of the Top Plus Program at Siemens Medical Solutions succinctly summarized this re-thinking of core competencies as follows:

“Our definition of core competencies shifted from an emphasis on product excellence to one on process excellence. If, five years ago, you had asked me what our core competence were, I’d have said ‘building the world’s best
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medical electronics.’ Today, we have moved beyond this narrow definition of core competencies.... We don’t have to do everything ourselves. We form partnerships with other firms to deliver integrated solutions. This means that we now see ourselves as the world’s best integrator of the world’s best products – even if we don’t build all of these products ourselves” (Haussmann, interview, December 12, 2001).

A final point emphasized in the case-study evidence was that in building the intelligent enterprise, it was not enough to look for attractive partners, but it was also necessary to position Siemens itself as an attractive partner for other companies looking for strategic partners (Neubauer, interview, November 16, 2001). Three resources that made Siemens a particularly attractive partner were emphasized in the case study: a strong brand name, a thoroughly developed business content, and last, but not least, a global human network (Davenport and Probst, 2000: 232-233).

- The brand name, Siemens, its history and tradition, its power of innovation and technology was considered the most important resource in building the intelligent enterprise.
- Another resource was Siemens’ global business content, i.e. the transactions and contacts with Siemens’ partners, suppliers, and particularly with customers. Siemens was active in more than 190 countries, and was continually founding businesses abroad and had an increasing number of global headquarters outside Germany. These contacts and transactions represented millions of internal and external transactions that made Siemens an attractive partner in building the intelligent enterprise.
- A third resource was Siemens’ global human network. More than 450,000 employees globally world were described as a tremendous asset in terms of the relationships that these people built with suppliers, customers, partners, governments and institutions.

Discussion: Overall, the case-study evidence provided a very good fit with the theoretical framework. The importance of not only leveraging internal resources, but also of collaborating with external partners was confirmed (Porter, 1985: 34; Hamel, 1991; Quinn, 1994). Similarly, there was evidence that companies’ value systems would interlink in various stages of the value chain. The case-study evidence confirmed two stages (product development in the mobile phones division and
logistics in the Automation and Control division). Furthermore, the importance of knowledge as the key criterion in deciding whether follow an ‘organic’ (i.e. internal), or external route of development confirmed the findings by scholars such as Bardaracco (1991), and Hamel (1991). Finally, Siemens was careful to distinguish competencies from non-core competencies in building the intelligent enterprise, and consistently only sourced non-core competencies. This was consistent with the literature, where scholars recommended keeping abreast of ‘corporate anorexia’ (Nasser and Vivier, 1995), ‘corporate amnesia’ (Nasser and Vivier, 1995), or ‘phantom limb effects’ (von Krogh, Roos, and Hoerem, 1997).

An interesting new insight that emerged was that Siemens explicitly focused not only on what makes other companies attractive from Siemens’ perspective, but also what made Siemens attractive from the perspective of other companies. This explicit emphasis was not found in the literature, which focuses mostly on criteria for selecting partners, typically without adopting the perspective of these partners (see, e.g. Bardaracco, 1991; Hamel, 1991).

6.3. Step three: Realizing imaginative strategies

This final section of creative imagination presents and discusses the empirical evidence gathered for the three imagination levers by introducing multidimensional performance goals, drafting unique selling propositions, and creating new market space.

6.3.1. Introducing multidimensional performance goals

In order to introduce multidimensional performance objectives, Siemens had developed a specific ‘Business Driver Scorecard’ as part of the Top Plus Program. The Business Driver Scorecard was often compared to a pilot’s instrument panel, which showed whether the business was on course by reflecting all key operating data, including tangible and intangible resources (direct observation, November 14, 2001). To illustrate: pilots carefully monitor their cockpit instruments and can make appropriate corrections the moment they notice they are off course. It was argued that company managers have a similarly complex task in keeping their day-to-day business firmly oriented on an overall strategy (Neubauer, interview, November 16, 2001). To help simplify this task, Business Driver Scorecards were introduced in all Siemens divisions. These scorecards provided a continuous, up-to-date overview of
current operations, allowing management to steer business developments and quickly spot when a business started “veering off-track” so that corrective action could be taken (Neubauer, interview, November 16, 2001).

Multidimensional performance objectives were introduced at Siemens by tailoring the individual Business Driver Scorecards to match a specific business and contained targets for individual functions and processes with a view to increasing the value of the company by focusing on tangible, as well as intangible assets (direct observation, June 1-3, 2000; Neubauer, interview, December 16, 2001). Von Pierer made the strategic significance of introducing multidimensional performance objectives very clear:

“Just as important in ensuring solid performance is the development and vigorous implementation of so-called balanced scorecards. This tool is used to enable management to monitor and steer – on a monthly or quarterly basis – the key business parameters needed for success” (von Pierer, speech, February 22, 2000).

The Business Driver Scorecards of the Top Plus Program were intended as an aid to ensure that day-to-day business could be controlled and measured holistically. Siemens appreciated that this could only be done if the business unit knew where it stood at any given point in time, and not just at the end of the fiscal year (Neubauer, interview, December 16, 2001). The Business Driver Scorecard offered a comprehensive overview of correlated business data as well as how these data were derived. In particular, it contained financial as well as non-financial measures (such as delivery times and employee motivation). Business Driver Scorecards were derived for each business unit individually, based on the business unit’s strategy, but within the broad corporate framework so as to ensure compatibility with other units (Neubauer, interview, December 16, 2001). The Business Driver Scorecard introduced multidimensional performance goals by focusing on four key perspectives:

- Employees/innovation (employee motivation, employee turnover, percentage of new to established products; and R&D cycle time – measured until launch of prototype),
- Customers/market (sales share of new products, customer satisfaction, quality index, and sales share of emerging regions),
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- Internal processes (delivery dependability, delivery capability, yield; and down time),
- Finance (orders received, economic value added achieved, and cash flow).

Operationalization of the above key perspectives can be illustrated by reference to Information and Communications wireline networks. Information and Communications wireline networks was the largest Siemens division, and focused on wireline telephony, introducing scorecards in all of its subdivisions and sales units. Introducing multidimensional performance objectives at this division comprised three steps. Since the scorecards comprised business drivers and related measures derived directly from the strategy, the initial phase focused on strategy development. The aim here was for management to reach a consensus on strategic targets and on the specific business drivers, which must be influenced to reach these targets. In the second phase, business drivers were identified and the appropriate performance measures were defined. Four teams corresponding to the four scorecard perspectives worked out these so-called key performance indicators: employee/innovation, customer/market, internal processes and finances. At the conclusion of the second phase, the business drivers and performance measures developed by the teams were approved at a management workshop comprising all members of management. In the third phase, performance measures were linked to target figures and the means for realizing the scorecards were decided upon. The project concluded with approval of the scorecard in an additional management workshop (Neubauer, interview, December 16, 2001). An interesting observation was that in the development workshops, a very helpful factor was the transparent, comprehensible, and rigorous development method, which was based on the Top Plus methodology. Interviewees noted that the development workshops were characterized by a dose of pragmatism: rather than searching for a 100% solution, this methodology focused on rapid conceptualization of the scorecard. The motto was “keep it simple – and have fun” (Neubauer, interview, November 2001).

The Power Generation and Transmission unit at Siemens underwent a similar experience. This unit began introducing balanced scorecards in September 1998. The scorecards were introduced in a top-down approach, that is, proceeding from the Group level to the divisions, subdivisions and segments. Internal consultants were available to support the various scorecard teams during the project. As with the example of Information and Communications wireline networks, introduction of
multidimensional performance objectives in this unit emphasized the need for pragmatism. To illustrate, with the help of standard tools (MS Excel, MS PowerPoint), the scorecards made a quick and convincing debut. In the medium term, it was necessary to integrate the scorecards into the existing IT infrastructure to ensure their acceptance as a core management tool (Neubauer, interview, December 16, 2001).

It should also be emphasized that with regard to the financial perspective, Siemens attempted to make performance of the individual units as transparent and comparable across the units as possible. Transparency to Siemens meant making both results and lack of results clearly visible. Particularly through the corporate-wide introduction of economic value added, Siemens established a uniform standard against which it consistently gauged performance throughout the company. In addition to a uniform measurement system, Siemens emphasized the need for agreement on goals (Mueller and Schmidt, Siemens World, 2000). Furthermore, the case-study evidence showed that agreement on goals need to be quantified, and to be set in relation to the broader business goals of the respective departments. In the words of von Pierer:

“All of our businesses have a single performance yardstick: economic value added. Together with each group, we set specific business targets for the year. In quarterly performance reviews attended by all group board members, we check to see if there are deviations from these targets, and if necessary, determine what corrective measures are necessary. In addition, these quarterly reviews provide a far better understanding of company-wide concerns and issues. They enable us to identify synergies and implement the most effective ways to exploit them” (von Pierer, speech, February 24, 2000).

Discussion. The ‘Business Driver Scorecard’ of the Top Plus Program provided a good overall fit with the theoretical framework. The main conjectures derived from the literature could be validated. Thus, Siemens’ Business Driver Scorecard reflected the dimensions of multidimensional performance objectives: the customer/market perspective, the internal business process perspective, the employee/innovation perspective, and the financial perspective (Roos, Roos, Edvinnson, and Dragonetti, 1998; Stewart, 1998; Sullivan, 1998). The four perspectives of the Business Driver Scorecard demonstrated that in line with the theoretical framework, Siemens
measured performance holistically, i.e. by reference to tangible as well as intangible assets (Stewart, 1998; Badaracco, 1991).

However, there were also differences with the theoretical framework. The main difference was that there was less emphasis then expected on the link between stock-market performance and the introduction of multidimensional performance objectives. The literature emphasized that the momentum behind the introduction of multidimensional performance objectives may be attributable to the fact that intellectual capital represents an increasingly large component of a company’s overall market value. In many instances intellectual capital even supersedes corporate book values. This difference between corporate market and book values is commonly referred to as the ‘value gap’ between market and book value (see e.g. von Krogh and Roos, 1996; Sveiby, 1997). The case-study evidence in this respect was not consistent with the literature, since no explicit link between stock market performance and the introduction of the Business Driver Scorecard could be established.

6.3.2. Drafting unique selling propositions

The case-study evidence demonstrated that the most important strategic goal of Siemens was to generate value for its customers better than anybody else could:

“I emphasize customer utility for one simple reason: the only justification for the existence of a company and its employees is that our customers need us and that we can serve their needs better and more efficiently than the competition can. That’s why it is important for us to find out how the kind of products and solutions we offer can improve the products and processes of our customers – and thereby help them to make more money. Our prime goal has to be to maximize customer utility” (Krubasik, interview, January 9, 1999).

The Top Plus Program brought a very interesting point to light: drafting unique selling propositions must not be done at all cost. For example, a common theme in the Information and Communications division was that the focus on turnover, rather than earnings before income tax as a basis for allocating benefits to the sales representatives, led them to close complicated deals that competitors would not want to do because they were not profitable enough (Schoss, interview, November 21, 2001). That this had to change was made very clear by von Pierer:
“[There is one] factor that has angered me for some time: the quality of the orders we take in. Sometimes I get the impression that some of our sales people still take pride in showing off their skills by acquiring especially complex and difficult contracts - orders which our competitors wouldn’t want, or, at least, not under such conditions – simply because they would regard the risk of losing money on the deal as being too high” (von Pierer, speech, June 13, 2001).

So the question for Siemens was: how can we draft unique selling propositions while making sure that the deals we close are profitable? Siemens Medical Solutions developed an enlightening approach for looking into possibilities for drafting unique selling propositions in a way that was profitable for Siemens and the customer:

“Integrating customers into the innovation process was key at Siemens Medical Services.... We used a co-joint analysis approach to get a deeper understanding of the wants and needs of our customers. This was done by forcing our customers to make trade-off decisions between various options. We would tell them, ‘listen, if you want his product feature, how much are you prepared to pay for it?’, or ‘if you are not prepared to pay extra for it, which other feature of the product would you rather not have?’ In this way, we literally forced them to make decisions based on whether a particular feature is (a) a must, (b) nice to have, or (c) not necessary. This process helped us to considerably streamline our portfolio and to create greater value for the customer” (Haussmann, interview, December 12, 2001).

As the quote by the manager from Siemens Medical Solutions illustrates, developing a deep understanding of what the customer really wants was key to drafting unique selling propositions. In particular, the case-study evidence showed that incremental improvements of a given product design can lead to ‘over-engineering’ of a product (Schoss, interview, November, 21, 2001; Spangenberg, interview, December 5, 2001). A senior development manager from the mobile phones division explained:

“Consumers are simply tired of all those new technological gadgets.... Often, they simply don’t want to be part of the next technology cycle. After all, we all use our mobile phones to phone somebody... perhaps for one or two other functions as well, but that’s it.... Where do we go with mobile phones? We
certainly can’t make them any smaller – we could, but nobody would be able to use them anymore” (Schneider, interview, November, 14, 2001).

It furthermore became evident that Siemens was using an emotional appeal in creating value for the customer in their consumer goods divisions. However, in the industrial goods divisions, a more functional appeal prevailed. The usage of emotional appeals in a consumer goods division is analyzed first, followed by the usage of functional appeals in an industrial goods division.

A telling example of using an *emotional*, rather than functional appeal to generate customer value was found in the mobile phone segment of the Siemens corporation. In this segment, a new communications strategy was started that aimed at giving the Siemens brand a more emotional appeal. This was deemed necessary, because market analyses and surveys had shown that the Siemens brand was traditionally associated with a conservative electrical engineering company. It was further found that although the company was often recognized as being quality-conscious, reliable and innovative, many customers, tended to perceive Siemens as unapproachable and generally not customer-oriented (Siemens World, Volume four 2001). To remedy these inadequacies, a campaign was launched to make Siemens’ positive features more visible through associating the company with specific adjectives such as innovative, flexible, far-sighted, inquisitive, human, competent and global. The key in this campaign was to associate Siemens with a more emotional appeal. Siemens believed that a more emotional appeal, introduced for example through certain attractive images (such as a man blowing bubbles) and the choice of certain words in advertisements (such as the words ‘spread the love’ in the advertisement with the bubble-blowing man) would help position the Siemens brand favorably among its younger customers. This was a major shift from the traditionally functional appeal of the company that was famous for its sophisticated in telecommunications and electronics (Siemens World, Volume 4, 2001; Schneider, interview, November 14, 2001).

A telling example of a *functional*, rather than an emotional appeal was found in the Transportation Systems. Here, Siemens experienced a general change in customer offerings. Instead of simply offering highly capable manufactured goods, Siemens and other firms are purveying a variety of value-added services to customers. Products themselves become part of ‘total solutions’ that include services that meet a customer
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need (Davenport, interview, May 31, 2001). A senior manager in the Transportation Systems business unit commented as follows:

“Providing customer value in the Transport business involves two aspects. First, customers want to transfer some of the risk to you, and you have to be prepared to take it on. This means you give the customer something he can calculate with.... he knows ‘I can rely on Siemens to keep the system running, and it will cost me this and that amount of money, and not more.’ Second, we are talking about economies of scale and scope. Since we are pooling maintenance activities, we can do them cheaper than the customer. Quite simply this means it makes sense for the customer to outsource them to us. This also means the customer will need less human resources, which leads to further cost reductions. In the aftermath of the global privatization and deregulation of the national railway systems, many of our customers realized that they no longer need to do everything themselves in order to keep their systems running.... The market changed from one of highly vertically integrated, state-owned enterprises to one of small, privatized, nimble players, who wanted to share at least some of their risks with their suppliers” (Zimmermann, interview, December 19, 2001).

Finally, as part of the Ten Point Program, the Center for E-Excellence was founded in order to turn Siemens into an ‘E-Company.’ An important focus of this center of competence was to customize experiences of buyers. As one manager put it, the ability to customize the experience of a customer by using the Internet, has given a new dimension to the established idea that ‘the customer is always right’ (Davenport and Probst, 2000: 237). The Internet offered unprecedented scrutiny by the customer in the form of online auctions and virtual marketplaces, where customers could compare Siemens products with those of competitors. The availability of alternative products and services through the Internet meant that the customer no longer tolerated poor service, uncompetitive pricing, or services that were difficult to use. It was argued that tapping into this scrutiny would enable Siemens to monitor the degree of customer satisfaction constantly. More importantly, it would help the company understand to what degree its knowledge about the customer is an authentic reflection of what the customer desires. This would eventually help Siemens in further gearing customer experience towards what he or she desired (Davenport and Probst, 2000: 235-238).
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Discussion. The case-study evidence backs up all conjectures made in the theoretical framework. To begin with, it was argued that in order to draft unique selling propositions, focusing on an emotional appeal is often more promising than focusing on a functional appeal, particularly in consumer goods industries (e.g. Kim and Mauborgne, 2000; Hamel, 2000). This was clearly validated by Siemens new campaign in the mobile phone division. Along the same lines, the literature-based framework suggested that a functional appeal could also be beneficial in the case of industrial goods. Again, the findings from the field study support the theoretical framework. Furthermore, the conjecture that in drafting unique selling propositions care must be taken not to ‘over-engineer’ products was validated, suggesting that creating value for the customer is less a function of technical product features and more a function of its utility to customers (e.g. Hamel, 2000; Kim and Mauborgne, 2000; Nonaka, Reinmoeller, and Seinoo, 1998).

6.3.3. Creating new market space

Siemens had a long track record of creating new market space. To illustrate: in 2001, the final year of the field study, the company invested 5.6 bn Euros in research and development investigating new opportunities in the market. About 57,000 employees saw to it that leading-edge technology was built into Siemens’ products. In addition to this, Siemens researchers produced 8,200 inventions in the fiscal year 2000. This equaled an average of 33 per day, and represented an increase of 10% compared to 1999, and produced an output of 5,280 new patent applications internationally. The field study furthermore revealed that Siemens was in a top position in terms of expenditures on research and development among the top ten electrical and electronics companies: competitors spent between 1.7 bn and 5.6 bn Euros on research and development (Raffler, interview, December 6, 2001). The focus on creating new market space was underscored in statements such as ‘innovations are our lifeblood,’ which was a recurrent theme in various media investigated in the field study (e.g. direct observation, October 23, 2001; Dachs, interview, November 8, 2001; participant observation, June 1-3, 2000; Krubasik, interview, January 9, 2000). Indeed, the idea of creating new market space could be traced back to the company’s origins more than 150 years ago:

“Our company’s 150-year history began with pioneering innovations in electrical engineering. Innovation is today – and always will be – our strongest competitive advantage. Siemens must be synonymous with innovation. Our
goal is to offer customers the finest technologies and most attractive products as quickly as possible, and at the most competitive prices” (von Pierer, speech, December 11, 1997).

Thus, creation of new market space had traditionally been a major concern for Siemens and continued to play a key role at the time of the field study. The central importance of creating new market space within the three key projects investigated (the Top Plus Program, specifically) was illustrated by von Pierer:

“We are expanding into strategically critical, high-growth sectors. Our internal innovation management is oriented towards this goal, and is a central part of our Top Plus Program. In addition, we are critically analyzing all of our businesses to see where we can use existing know-how to penetrate and cover new market segments” (von Pierer, speech, December 14, 2000).

A similar, if less vocal, emphasis could be found in the Ten Point Program (direct observation, October 17/18, 2000). Operation 2003 had less of an emphasis on creating new market space, possibly because the focus of Operation 2003 was on cost-cutting in the first instance, and stimulating growth through creating new market space did not feature as strongly at the time of the field study (Neubauer, interview, November 16, 2001). By contrast, the Top Plus Program put a stronger emphasis on the coincidence of cost cutting and creating new market space:

“Top Plus Program... contains elements of process optimization, quality management, and asset management. The original top idea was born from Kaizen and Total Quality principles... that’s cost cutting, of course. However, Top Plus also puts a strong emphasis on innovation and sales stimulation.... Sales stimulation seeks to find new markets for existing products, whereas innovation seeks to tackle new markets with new products, or seeks to position new products in existing markets. Both approaches focus on growth by identifying ‘white spots’ in the market” (Neubauer, interview, November 16, 2001).

As the above quote illustrates, the Top Plus Program put a deliberate emphasis on the complementary nature of cost cutting and creating new market space, as evidenced by the Top Plus modules ‘cost effectiveness,’ ‘asset management,’ on the one hand, and
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‘sales stimulation,’ and innovation’ on the other hand (Siemens World, 3, 2001: 30-33; Neubauer, interview, November 16, 2001). Various media in the case-study evidence consistently showed that cost-cutting measures and productivity gains provide short-term relief and are in themselves insufficient (e.g. von Pierer, speech, February 22, 2001; Krause, interview, November 12, 2001; direct observation, October 23, 2001). It was interesting to note that great consensus prevailed among the empirical data sources as to the doubtful benefits of re-structuring programs in other companies. It was frequently heard that a preoccupation with re-structuring would prove fruitless if companies focused merely on the cost factor, at the expense of focusing on sales stimulation and innovation. In this context, von Pierer emphasized:

“Boosting sales means growth, which is crucial for safeguarding the future as the essential complement to cost cutting. If we simply reduce costs without growing at the same time, we will shrink” (von Pierer, speech, July 25, 2001).

In this context, it must be appreciated that even in a period of general economic downturn, Siemens put a deliberate emphasis on creating new market space by introducing a new innovation initiative, called ‘Pictures of the Future.’ This strategy for ‘inventing the future’ (Raffler, interview, December 6, 2001) was initiated by the board and executed by the corporate research and development department. Pictures of the Future were detailed studies presenting Siemens’ technological visions for five key corporate areas: Information and Communication, Power, Transportation Systems, and Medical Solutions (section 4.1.2 on diagnosing industry dynamics elaborates on this point). These studies were intended to obtain information on emerging technologies, their market potential, and new business areas that could lead to new market space (Raffler, interview, December 6, 2001; Neubauer, interview, November 16, 2001; Stuckenschneider, interview, November 22, 2001).

The initiative Pictures of the Future was the result of the corporate research and development department working with the operating groups for several years to develop a methodology for creating new market space. This methodology involved two opposing perspectives, each of which reinforced and at the same time questioned, the other:

- Extrapolation (from the present to the future), and
- Retropolation (from the future to the present).
Extrapolation started with the current business definition on business level and on corporate level and centered on projecting current trends into the future. The trends investigated emanated from three key areas: products, technologies, and customer requirements (Pictures of the Future, October 2001, Raffler, interview, December 2001). Extrapolation could best be described as road mapping, i.e. projecting the technologies and products of today into the future. The aim here was to anticipate, as precisely as possible, the point in time at which certain products and services would become possible, or when a market need for them would have arisen. It was frequently emphasized that it is essential to extrapolate using the customer’s perspective:

“[An] important aspect of creating new markets is to start with people, not with technology. Often you find engineers coming up with sophisticated approaches that do not address concrete customer needs.... In creating new markets, it is much more important to focus on human beings, their ways of doing things, their habits, desires, and problems” (Stuckenschneider, interview, November 22, 2001).

The advantage of extrapolation – an objective starting position – was also considered its biggest weakness, since the method failed to predict discontinuities and great leaps forward in the development process. Figuratively speaking, while

“road-mapping will take you on a journey along a well-built road, you won’t see much of what’s happening beyond the roadside. And you can never be sure the road isn’t about to end suddenly, in which case it would have been better to turn off miles before” (Eberl, 2001).

Retropolation attempted to compensate for the weakness in extrapolating, and was designed as the complement to extrapolation. Using the logic of scenario planning, retropolation involved placing oneself imaginatively some 10, 20, or even 30 years into the future. The time scale depended on the area of activity under investigation. For example, it could be easier to make prediction about the nature of power generation and distribution in 30 years than it would be to make equally reasonable statements concerning Information and Communications technology (Pictures of the Future, October 2001; Raffler, interview, December 6, 2001). Once a relevant time frame had been selected for retropolating trends, a comprehensive scenario could be
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devised, incorporating relevant factors such as the future development of social and political structures, environmental considerations, globalization, technological trends and customer requirements. The trick in retropolating was to backtrack to the present from the ‘known’ facts of the future scenario. In this way, by combining extrapolation and retropolation, it was possible to identify the kinds of challenges and opportunities that had to be taken into account when creating new market space (Raffler, interview, December 6, 2001; Stuckenscheider, interview, November 22, 2001).

Discussion: Overall, the case-study evidence relates very well with the theoretical framework. However, the emphasis on creating new market space differentiated between the three key projects investigated. Less than expected emphasis for creating new market space was found in two key projects investigated (the Ten Point Program and Operation 2003). This was compensated by the very strong emphasis on creating new market space within the Top Plus Program. Indeed, in the final year of the field study, Siemens started an initiative (Pictures of the Future) specifically geared towards creating new market space as part of the Top Plus Program.

The Pictures of the Future initiative accommodated all key features of creating new market space that the theoretical framework delineated from the literature. First, the strategy making matrix emphasized that creating new market space refers to the generation of value for the company not by matching or beating their rivals in existing markets, as in the competitive strategy orientation characteristic of the descriptive imagination literature, but by looking for entirely new business opportunities (Kim and Mauborgne, 1999b: 83). Second, the literature-based theoretical framework emphasized that looking across industries was key in finding entirely new business opportunities. This conjecture was validated in various media. To illustrate with a quote by the assistant to the CEO of the Information and Communications business unit:

“At Information Communication Networks, we look into other industries. We ask ourselves: what can we do in the media industry, in entertainment, and how do these opportunities interact with our own product and competence portfolio, as it appears today? These are really good approaches, because they help us to mirror what is going on in the market” (Berner, interview, November 22, 2001).
Third, through its focus across industries, rather than within industries, Siemens’ approach reflected the emphasis on rethinking the inevitableness of industry conditions in order to broaden the range of strategic actions available to the firm (e.g. Kim and Mauborgne, 1999a,b; Hamel, 1996). To conclude, a word of caution is in order, however. While the researcher was fortunate to have been able to study creating new market space in real time (Pictures of the Future was established in the final year of the field study), this also meant that concrete results from this initiative could not yet be ascertained. More longitudinal work is necessary to monitor these developments.

7. Challenging imagination in strategy making

The previous sections dealt with descriptive and creative imagination, respectively. The present section deals with another important thrust in strategy making: challenging imagination. As was customary in the previous sections, this section (a) presents, and (b) discusses the evidence that could be gathered in the empirical analysis as it pertains to the three generic steps in crafting strategy imaginatively: envisaging, conceiving, and realizing strategies.

7.1. Step one: Envisaging imaginative strategies

The first step of challenging imagination comprises the three imagination levers ensuring coherence, defying old paradigms, and fostering a culture of constructive dissent.

7.1.1. Ensuring coherence

The literature-based theoretical framework emphasized that tending to two areas of corporate involvement can ensure coherence: the internal and the external arena. The case-study evidence demonstrated that externally, Siemens’ most important commitment was to concentrate on a focused growth in the electronical and electronics industry. The case-study evidence further demonstrated that the most important commitment of all in ensuring coherence internally was knowledge management and collaboration between the different business units. Both areas, the internal and the external, will now be investigated.
The evidence regarding how Siemens ensured coherence in the external arena, i.e. with the corporate environment, is discussed first. Various sources in the case study pointed to the importance of ensuring coherence with the corporate environment. In particular, it was emphasized that Siemens would first not diversify into unrelated fields and would, second, not split up into ‘various parts’ i.e. give up the corporate, conglomerate form (von Pierer, speech, February 18, 1999; Krubasik, interview, June 13, 2001). This emphasis was particularly evident in the Top Plus Program and in the Ten Point Program. In the words of von Pierer:

“We will continue to cover more than just one field in the huge electrical and electronics growth market.... Siemens has comprehensive expertise across a wide variety of business segments. With our global presence, the know-how of excellent employees throughout the world, and the outstanding reputation of Siemens, we can focus and consolidate our strengths to be benefit of our customers. Within our business segments we intend to focus on those fields in which we, as a global player, have a realistic chance of gaining and keeping a leading market position” (von Pierer, speech, February 19, 1998).

The message that Siemens would remain an electrical engineering and electronics company was found in various media in the case-study evidence (e.g. Mirow, interview, September 26, 2001; von Pierer, speech, February 18, 1999; Krubasik, interview, June 13, 2001). In these media, it was emphasized that Siemens would continue focusing its activities on a manageable number of business segments in which the company could maintain or achieve a strong competitive position (von Pierer, speech, February 18, 1999). Factors often mentioned in interviews and archival documents that would aid in these efforts were the breadth of technological know-how, the company’s knowledge of customer needs established over the 150 years of its existence, and its global presence (Mirow, interview, September 26, 2001; Dachs, interview, November 8, 2001; von Pierer, speech, February 22, 2001). On occasion of an annual shareholders’ meeting, the CEO emphasized:

“One thing is for certain: Siemens will remain in its core business of electrical engineering and electronics and will not diversify into non-related fields. Recently, we have been hearing suggestions... that Siemens should split up into various parts. The reasoning is that such a move would increase the value of the company. We are not convinced by the argument. It ignores the fact that we
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draw our strength from our internal synergies.... We consequently use all the synergies offered by our broad spectrum of competencies. This is especially true of... microelectronics. Microelectronics is a cross-industry technology in which we enjoy a world-class position and which is indispensable for each of our operating units” (von Pierer, speech, February 19, 1998).

The idea of a ‘Siemens fit’ of new business opportunities seems to underlie von Pierer’s reasoning above. This notion of ‘Siemens fit,’ or the expected synergy-potential of business opportunities, was emphasized in an interview with the head of strategic marketing in the corporate technology department; further insight into von Pierer’s focus on internal synergies can be gained from the following excerpt of this interview:

“We have a three-step approach to assessing the viability of tackling a new market-opportunity. Creating new markets is first and foremost about establishing the potential market’s attractiveness. The question here is: what are the likely competitors to emerge in the market?, and not the question: what are the existing competitors in this market?. Another question is: does this market align with Siemens’ business? Call it ‘ascertaining the ‘Siemens fit,’ if you wish. This question is even more difficult... criteria include: do we have an established set of customers whom we can leverage to the new market?, what are likely entry barriers to this market if we do not have easy access, e.g. through established distribution channels that we could leverage for the new product or service? The third question is: what are the lead times to generating a positive cash-flow in this market....? A difficult question this one, and one that cannot be given a general answer to.... In concrete terms, we are looking at earnings before income tax to sales of a minimum of 10% for the new market-opportunity to be viable” (Stuckenschneider, interview, November 22, 2001).

Whereas the focus of Siemens in the external arena was on synergy potential of business opportunities and the Siemens fit, the focus in the internal arena of ensuring coherence was on account management. The case-study evidence demonstrated that the most important aspect of ensuring coherence in a diversified company such as Siemens was account management as a means to overcome the challenges of cross-group collaboration in the delivery of integrated solutions to large customers (Siemens World, Volume four, 2001; Krubasik, interview, June 13, 2001; Schoss, interview,
November 21, 2001). Account management was a pointer that was explicitly mentioned in the Top Plus Program, and a member of the corporate board was specifically assigned to further the company’s account management approach. This person described the rationale of account management as follows:

“Customers want complete solutions from a single source. However, our internal setup is often rather confusing to them. After all, it is of no consequence to them whether three or ten of our divisions are involved in the creation of their solution” (Krubasik, interview, June 13, 2001).

In order to ensure coherence internally, the Siemens corporation established an integrated account management program under the auspices of the Top Plus Program. This approach to account management ensured that customers had a ‘single point of entry’ to the highly diversified Siemens corporation. For example, in the Automation and Control division, sales staff from various groups collaborated to set up cross-divisional account teams. One such team existed for every one of the Automation and Control group’s strategically important customers. These teams worked to develop customer relationships according to specific targets. What gave this approach the competitive edge over conventional customer care was that it enabled Siemens to present a cogent and coordinated image across all the relevant groups. In one instance, this factor led a customer in the pharmaceutical industry to award Siemens a contract, even though it had initially decided to opt for a competitor (Neubauer, interview, November 16, 2001; Siemens World, Volume three, 2001). In this context, Davenport observed in an interview:

“Siemens is... a highly diverse organization that participates in a wide variety of businesses. The company has certainly been called a conglomerate in its history. For decades, scholars of business and organizations have deliberated over how such collections of relatively independent businesses can get synergies or increased value through collaboration. How can the whole be made greater than the sum of the parts? Firms hesitate to ask individual business units to help each other for fear that they will sub-optimize their own performance. But knowledge management offers a potential solution to this dilemma. If knowledge can be shared easily across business units, then one Siemens business unit can take advantage of the learning and expertise from another” (Davenport, interview, May 31, 2000).
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Davenport, as well as other interviewees consulted for the case study demonstrated that Siemens’ approach to knowledge management was also unusual for the diversity of initiatives and applications that are underway within the company (Klementz, interview, November 21, 2001; Krause, interview, November 12, 2001; participant observation, June 1-3, 2000). Davenport remembered

“Most firms that I have observed, focus almost all of their efforts on one major initiative— most commonly a knowledge repository. At Siemens, however, the variety of initiatives and applications... is much greater. There are also a wide variety of knowledge content domains being addressed within the firm, including best practices, customer knowledge, competitive intelligence, product knowledge, financial knowledge, and so forth. The breadth of approaches and tools being employed across Siemens is a good fit to the diversity and complexity of the organization itself” (Davenport, interview, May 31, 2000).

Thus, the Siemens approach to ensuring coherence internally centered on managing the flow of knowledge between the individual units within Siemens. In the same interview, Davenport even noted that while Siemens had been an organization known in the past for its strong hierarchy, its approach to knowledge management was not hierarchical at all. Instead, the approach was relatively grass roots and bottom up:

“After... business units began to develop knowledge initiatives, they looked around and noticed that others were doing the same thing. After a period of informal communication, the employees and managers, who were managing knowledge around the firm, began to form a semi-official community of practice themselves. Ultimately they began to feel that they needed a corporate group to facilitate the firm’s broad efforts, and they were successful in convincing senior executives to create the function. The Corporate Knowledge Management function is still a small organization. Most of the knowledge management efforts are taking place in the business units, but the corporate group plays a valuable coordinating role” (Davenport, interview, May 31, 2000).

An interesting observation was that ensuring coherence in the internal arena not only meant developing synergies between the individual business units through knowledge
“[A] tension in Siemens will be between knowledge initiatives that support the entire firm, versus those that advance a particular business unit or even a smaller group within it. Firm-wide initiatives help to exploit the scale of Siemens.... More specialized, focused initiatives will be more easily measured, and may be better supported by managers who are responsible for a unit’s financial performance... this is a creative tension that will play out over time. Thus far I believe Siemens managers have handled it well—far better than most of the large, multi-business firms I have encountered” (Davenport, interview, May, 31, 2000).

Discussion: There was a very good fit between the case-study evidence and the theoretical framework. The theoretical framework suggested that coherence be ensured internally (between the individual business units) and externally (with the corporate environment, and the emerging business opportunities). The empirical case-study evidence supported both the internal and the external arena. Regarding the internal arena, as recommended by Hamel and Prahalad, ensuring coherence requires a strategic focal point on which the efforts of individual employees, organizational functions and businesses can converge over time (see also Hamel and Prahalad, 1994a, b). This was clearly confirmed by the knowledge management and account management initiatives at Siemens. Similarly, regarding the external arena, as recommended by scholars such as Lissack and Roos, ensuring coherence requires the company to assess new market opportunities in the light of the envisaged degree of consistency with the company’s line of business (Lissack and Roos, 2001: 16; Hamel and Prahalad, 1993: 80). This was evidenced by the notion of a ‘Siemens fit’ as the key criterion according to which to judge a new business opportunity.

An interesting new insight that was found in the case-study evidence related to ensuring coherence in the internal arena. Here it became clear that the most important commitment for ensuring coherence internally was creating synergies between the individual units by enabling the flow of knowledge between them. This, however, was considered to be insufficient. In order to exploit the full potential of ensuring coherence internally the tension in Siemens between knowledge initiatives that support the entire firm, versus those that advance a particular business unit or even a
smaller group within it had to be managed. In other words, coherence had to be ensured not only between the functional groups, but also between the knowledge management initiatives underway within the functional groups.

7.1.2. **Defying old paradigms**

Siemens had long understood the importance of defying old paradigms. The company exhibited a variety of approaches by which old paradigms were defied, old ways of ‘doing things around here’ were challenged and path-dependent behavioral patterns were questioned (Mirow, interview, September 26, 2001). In the *Top Plus Program*, there was a clear emphasis on the importance of defying old paradigms. To illustrate: the head of corporate strategic marketing emphasized the importance of challenge Siemens’ core competencies as an integral part of the Top Plus Program:

> “Innovation does not come from squeezing the last drop of juice from core competencies.... Indeed, we often need to proactively ‘cannibalize’ what we considered our core competencies in the past” (Stuckenschneider, interview, November 22, 2001).

In addition to the Top Plus Program, the case-study evidence in the *Ten Point Program* and *Operation 2003* also emphasized the need for defying old paradigms. This need to defy old paradigms was seen as a function of the past successes achieved by using a specific paradigm, such as the telex technology. Put differently, the more successful Siemens became in exploiting a specific technology such as telexes, the more important the need was to defy this very paradigm at the time when it was most successful. Various media throughout the case-study evidence supported this paradox of challenging ‘ways of doing things around here’ before, rather than after, the value of established practices depreciated (Spangenberg, interview, December 5, 2001; Siemens World, Volume 3, 2001; direct observation, November 14, 2001). Indeed, it was discovered that past successes could lead to:

> “systematic biases against innovation.... Particularly if a new technology competes with an old one, reactions and biases against the new technology can kill its commercial potential immediately. The fax machine is a good example. Siemens actually invented the fax machine, but since the telex technology provided excellent profits that could be cannibalized by the fax technology, we
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sold the fax to the Japanese. The rest is history” (Spangenberg, interview, December 5, 2001).

One interviewee revealed a very interesting underlying reason why Siemens employees of German nationality particularly find defying old paradigms difficult:

“A deterring factor... is the German tertiary education system.... After we leave school, and even in school, we are turned into specialists who no longer look left or right. Japan is another example of this approach.... This [approach] can be very effective when efficiency is the name of the game. The Japanese taught us a lesson in the eighties from which we have yet to recover. The problem is that the super-efficient company is not necessarily the most innovative company. Squeezing another drop of juice from our core competencies doesn’t do the trick in hyper-competitive environments in which our competitors are squeezing just as hard as we are. ‘Me too’ is a killer here” (Stuckenschneider, interview, November 22, 2001).

Another inadequacy that necessitated defying old paradigms were ‘functionality traps,’ i.e. the results of ever increasing levels of functionality in a product or service as a result of incremental innovation:

“The problem with established products is that innovating them tends to be incremental. Today, our Hicom 300 telephones have some 4000 functions.... One question is if the customer actually needs or utilizes all these functions. Another question is whether this kind of functionality is replicable in a different technology. With voice over Internet protocol technology, it certainly isn’t replicable yet.... It’s very difficult to fall into this ‘functionality trap’ of ever increasing the performance of an existing product without asking if this is appropriate given customer needs and market and technology trends” (Spangenberg, interview, December 5, 2001).

Given the deeply ingrained nature of ‘ways of doing things around here,’ often-radical approaches to defying old paradigms were necessary. Operation 2003, but also the Top Plus Program and the Ten Point Program made use of defying old paradigms as a

25 Voice over Internet protocol was a new technology that transferred telephone conversation over the Internet, rather than over traditional wireline networks.
‘shock therapy.’ This was particularly evident in the new approach to portfolio management, which no longer supported cross-subsidies between the individual business units. It was repeatedly emphasized, that “no one should feel safe in or comfortable in such divisions simply because the group as a whole is doing well. Let me emphasize once again, we will not support cross-subsidies” (von Pierer, speech, June 13, 2001). In the 2001 annual business conference, von Pierer even emphasized:

“Word has gotten around that the term ‘core business’ has more or less been stricken from our vocabulary, because it can lead to divisions labeled core business, feeling safe and protected by their dictum: ‘after all, we are one of the company’s core businesses - nothing will happen to us, no matter what our results are like.’ Absolutely wrong. No one enjoys such security at Siemens. Those who fail to achieve their margin targets and sustain them are up for disposition. And we are not just playing with words here. We are serious” (von Pierer, speech, June 13, 2001).

While such ‘shock therapies’ to defying old paradigms were being encouraged, a prudent approach to defying old paradigms was simultaneously being advocated in the case-study evidence. Interviewees sometimes favored a prudent approach over the shock therapy, because sudden defiance of old paradigms, particularly where they referred to capabilities and skills that were considered core competencies, could lead to demotivation and frustration (Neubauer, interview, November 16, 2001; direct observation October 23, 2001). The case-study evidence demonstrated that a balance was needed between challenging old ways of doing things in order for the company not to suffer from its depreciating intellectual capital, while doing this with a sense of appreciation and respect for the past achievements and successes of employees. A senior manager at corporate technology argued that defying old paradigms

“is a highly sensitive process, and one that needs to be done extremely carefully. You can’t simply tell your employees that their core competencies have turned into core incompetencies over night. After all, what you want is their buy-in, and shouting in their faces that they’re incompetent does not help. Instead, in getting rid of counter-productive ‘ways we do things around here,’ we need to show our colleagues quick wins, even if they are minutely small” (Stuckenschneider, interview, November 22, 2001).
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One way of defying old paradigms using a prudent approach, rather than a shock therapy was using a deliberate lack of prior industry knowledge. Lack of prior industry knowledge was seen as instrumental in order to ‘not get locked into the industry paradigm’ (direct observation, November 14, 2001; Spangenberg, interview, December, 5, 2001). A very interesting example of the benefits of lack of prior industry knowledge was illustrated in an interview with Thomas Ganswindt. Ganswindt was responsible for a turnaround at The Siemens Transportation Systems unit, and replaced Roland Koch as CEO of Information and Communications Networks towards the end of July 2001. When challenged on the ground of his lack of prior industry knowledge in the telecommunications sector, Ganswindt replied:

“Those who think that knowledge of the telecom industry is important here have not understood the situation at Information Communication Networks”

(direct observation, October 23, 2001).

Discussion. The case-study evidence provided a very good fit with the theoretical framework. Most of the salient features of defying old paradigms that were distilled from the literature could be validated in the field study. For example, in line with Hamel (2000), the need for defying old paradigms even while certain ‘ways of doing things around here’ were extremely successful could be ascertained by reference to the telex/fax technology. Furthermore, in line with the theoretical framework, it transpired that defying old paradigms is an inherently destructive endeavor (e.g. Nasser and Vivier, 1995), and therefore needs to be done with great care in order to avoid frustrations and demotivation. Finally, even Hamlet’s provocative evocation of the need ‘to celebrate the stupid,’ i.e. those that lack industry knowledge (Hamel, 2000: 138) could be established, and it was found that lack of industry knowledge can be helpful in re-conceiving orthodoxies in an industry. In the case-study evidence, the need to re-conceive orthodoxies was most pronounced in the informations and communications industry.

In addition to this, an interesting new insight could be established, namely the finding that tertiary education systems could foster the tendency to adhere to a certain mindset. Thus, It was found that the German tertiary education system, which is characterized by high levels of specialization, could be a deterring factor in the attempt to defy old paradigms that tend to be associated with specialization. The interaction of national tertiary education systems on defying old paradigms could not
be found in the literature and should therefore be seen as a valuable addition to the theoretical framework.

7.1.3. Fostering a culture of constructive dissent

Data collection on fostering of a culture of constructive dissent was far more difficult than for any of the other imagination levers. Evidence for fostering a culture of constructive dissent was, perhaps unsurprisingly, virtually absent from the interview data. There was some, but unsystematic, evidence in the participant observation data (particularly participatory observation, June 1-3), and in direct observation data (e.g. direct observation, October 23, 2001). Overall, however, no systematic evidence for fostering a culture of constructive dissent could be found in data sources other than those of historical or archival nature, and our account in this section concentrates mainly on transcripts of Annual Shareholders’ Meetings and conferences.

An unusual illustration for fostering a culture of constructive dissent, which is worth citing, was found in the transcripts of the 1998 annual Siemens International Conference. The fact that fostering a culture of constructive dissent made it possible for an organization to survive a good 1500 years was made clear by an unusual guest speaker. Father Anselm Bilgri from Germany’s Andechs Monastery amazed Siemens managers with a cryptic presentation on the rules of his order as a management tool that enabled the Benedictines to survive ten times as long as Siemens. One of the main rules, according to Father Anselm, is to ‘stop grumbling.’ This indicated that managers discussing things off the record was a waste of time, instead, the right way appeared to be to “roll up your sleeves and tackle the problem” (Vilsmeir, 1998).

In contrast to Father Anselm’s insights, Von Pierer made it very clear in several Shareholder Meetings that Siemens is in fact not a company inclined to nurture a culture of constructive dissent. To illustrate: von Pierer emphasized that at Siemens, “We must see common ground and not things that divide us. And there must also be a willingness to make compromises, and quick compromises at that” (von Pierer, speech, June 13, 2001). Indeed, the case-study evidence pointed out that Siemens’ management culture involved the joint agreement of clear targets by employees and their superiors (direct observation November 14, 2001; direct observation, October 23, 2001). The key was to enable employees across hierarchical levels to buy-in in strategy-making frameworks such as the Top Plus Program, the Ten Point Program and Operation 2003. The result of this endeavor formed the basis for the so-called
‘Employee Dialogue.’ The Employee Dialogue comprised a series of discussions, on which employee promotion and demotion was based within Siemens. The Top Plus Program had specifically developed a method for arriving at an individual employee or manager’s contribution to the achievement of the business targets. This method was the so-called ‘Top Plus Target Agreement Process.’ It involved target agreements on three levels (von Pierer, speech, June 13, 2001; direct observation November 14, 2001):

- Vertical consistency of targets. Targets for individual employees were derived from the business targets. The sum of the individual targets was the overall target.
- Horizontal consistency of targets. Avoidance of competing or overlapping targets at the same hierarchical level.
- Rapid implementation of the target agreement process. Targets were agreed upon with all employees of a division, or sub-division within approximately two months.

The key element of the Top Plus Target Agreement Process was the target agreement cascade. This approach was characterized by a series of workshops, in which the business targets were broken down to arrive at targets for individual employees. The participation of three hierarchy levels (middle management, lower management, and front-line employees) ensured the horizontal and vertical consistency of the targets. Personal development targets and (where not already agreed upon in the workshops) management and cooperation targets supplementary to the business targets, as well as written agreement of targets were dealt with in an ongoing basis in the ‘Employee Dialogue’ discussions (Neubauer, interview, November 26, 2001; Krause, interview, November 12, 2001).

Discussion: The case-study evidence was incomplete in several areas. First, data collection was very difficult, probably due to the sensitive nature of the topic. Thus, the data presented in the final report almost invariably came from archival sources. No systematic real-time observations could be made. Indeed, the case-study evidence seems to suggest that the exact opposite of fostering a culture of constructive dissent applies to Siemens, i.e. a culture of constant consent, as was illustrated with the Target Agreement Process that represented an integral part of the Top Plus Program. However, it should be appreciated that Father Anselm’s advice to the Siemens board
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is a direct reflection of the recommendation in the literature to ‘focus on issues, not personalities’ as a key enabler in fostering a culture of constructive dissent (Eisenhardt et al., 1997; Eisenhardt, 1999; Eisenhardt and Brown, 1998).

7.2. Step two: Conceiving imaginative strategies

This section (a) presents and (b) discusses the case study material for deconstructing value chains, co-opting customer competence, and co-evolving with the knowledge landscape.

7.2.1. Deconstructing value chains

Siemens took special advantage of deconstructing value chains to establish new business opportunities through e-business applications. Despite the decreasing excitement about e-business in other companies, Siemens made a conscious effort to profit from the separation of the flow of physical goods from the flow of information goods. Von Pierer’s humorous remark is worth appreciating in this regard:

“The ‘E’ has lost some of its appeal, because many of the companies that claimed to be ‘e-companies’ didn’t have any substance... The hype [surrounding e-business] is reminiscent of the fairy-tale ‘The Emperor’s new clothes.’ It took people a while to realize that the emperor is actually naked” (von Pierer, interview, June 18, 2001).

In all three key projects investigated (Top Plus Program, the Ten Point Program, and Operation 2003), the field study provided a case in point in illustrating the deconstruction of value chains. The deconstruction of the industry value chain and the implications this had for Siemens’ value chain in the telecommunications unit, provides the most telling example. From the inception of the telephone service until the 1980s, telecommunication equipment customers around the world were mostly of one type: the monolithic, integrated telephone company. The entire set of activities involved in providing telephone service to the end user, i.e. the entire value chain from the planning of the network to its operation to customer acquisition and care were concentrated in a single entity. With fully integrated customers, it was also natural for the supplier of the telecommunications equipment to be fully integrated. A single customer in a monopoly position would not naturally have found an advantage in integrating offerings from diverse suppliers, because even if there had been a cost advantage to be gained in such a practice, a monopoly was not naturally cost-sensitive
Interviewees emphasized that this situation, however, had changed: in order to provide more competitive pricing and service to customers, governments had over the last two decades been deregulating the telecommunications services market. In addition to the deregulation of markets, technological advances in electronics and computer science led to an explosion of new products and service offerings in the telecommunication services market (Davenport and Probst, 2000; participant observation, June 1-3, 2000; Berres, interview, February 3, 2001). This worldwide deregulation process of telecommunication had broad implications for the telecommunications value chain. The most important implication was that the formerly integrated, monolithic telephone companies of the past were becoming an anachronism. Where once it had been possible for a company to shift costs between services, for example by charging a high price for long distance calls that cost little to supply, and using the margins on this lucrative long-distance service to subsidize residential service, after deregulation competing long-distance service companies with no residential business to subsidize, could beat the incumbents on prices, and cost-shifting was no longer possible. Induced by the new competitive landscape in the telecommunication supplier business, many of the new entrants to the market were complex packages of services and products, rather than simply products (Berres, interview, February 3, 2000; Walther-Klaus, interview, February 2, 2000; Boston Consulting Group, 1998). According to von Pierer,

“Today’s customers are a new breed. They very often demand integrated and innovative solutions from one source – everything from planning, financing, engineering, and components to construction, commissioning and operation. We have to provide this full spectrum, plus backing what we deliver with the best possible service” (von Pierer, speech, June 19, 2000).

Thus, at the time when some elements of the telecommunications equipment value chain started to resemble commodities, which yielded significantly lower profit margins, the telecommunications solution selling business was becoming more important because of its higher value-added. This meant that the individual salesperson had to co-ordinate the many aspects of the telecommunication equipment offering, including financing, business analysis, and network planning. Interviews
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emphasized that this could be time-consuming, difficult and complicated (Berres, interview, February 3, 2000; Walther-Klaus, interview, February 2, 2000). This meant that the flows of physical products had to be separated from the flows of knowledge products in order to profit from deconstructing value chains (Boston Consulting Group, 1998; participant observation, June 1-3, 2000).

Deconstruction of the value chain into its physical and electronic components was particularly evident in Siemens’ global business content, i.e. the transactions and contacts with Siemens’ partners, suppliers, and customers (Davenport and Probst, 2000; Klementz, interview, November 20, 2001). These contacts and transactions represented trillions of internal and external transactions that were vital for successful e-business and new opportunities, and emphasized the need for competing on ‘reach’:

“In one of our Industry groups [in Information and Communications Networks]... customers can choose from among 50,000 products in a virtual mall. Overall, we expect to generate at least one-quarter of our business online in the near future. And our consumer business such as telephones or computers should very soon be well over 50%” (von Pierer, speech, June 19, 2000).

The case-study evidence showed that in a broader sense the greater reach represented millions of contacts with suppliers and partners, and especially customers. Interviewees explained that during these contacts it was predominantly knowledge, i.e. the non-physical component that was being exchanged (Dachs, interview, November 8, 2001; Davenport, interview, May, 31, 2000). Leveraging these contacts by using the company’s extensive experience of knowledge management therefore represented vast opportunities not only for cost savings, but also for further increasing revenue (Davenport and Probst, 2000: 231). According to von Pierer, this meant

“completely changing our internal processes. We are electronically networking everything from R&D, procurement and production to marketing, sales and services. Time and location are becoming irrelevant factors in the value chain. The driving factors here are speed, flexibility, responsiveness, reliability and quality” (von Pierer, speech, June 19, 2000).
The deconstruction of value chains also emphasized the importance of *competing not only on ‘reach’ but also on ‘rich’ information*, as illustrated by the following quote by the board member with special responsibility for e-business:

“For the first time it is possible to deliver *information that is both rich and comprehensive* to a circle of addressees of unprecedented scope. For business conducted via the Internet, this means: transparency inexorably leads to unprecedented comparability among competitors and their offerings. Customer relations are likely to be less stable than in the future.... This is why we are developing radically new business models at Siemens in order to make the entire corporation Internet-fit” (Radomski, interview, December 10, 2000).

The *Ten Point Program* specifically accentuated competition on both richness and reach. Indeed, one aspect was engineering the ‘e-readiness’ of the entire company. ‘E-readiness’ was an important part of the Ten Point Program, and 1bn Euros were invested in this part of the Ten Point Program. Expected savings were between 1 and 2%, equaling 1.5 billion. Siemens used an integrated, across-the-board approach in ‘e-readiness,’ as described by von Pierer:

> “*electronically networking the entire value chain* and all of its processes – externally with our customers, suppliers, and partners, and internally with our employees” (von Pierer, speech, February 22, 2001).

To master the challenges of deconstructing value chains, Siemens established *five elements* as constituents of ‘e-readiness’ initiative (Davenport and Probst, 2000; Klementz, interview, November 20, 2001):

- First e-knowledge management was set up to make the company’s pool of knowledge available to all employees across all regions and businesses, in order to ensure that “everyone at Siemens knows what Siemens knows” (von Pierer, speech, February 22, 2001).
- The second element was e-procurement, which offered enormous potential for greater efficiency. Siemens was aiming at handling 50% of its 35 bn annual purchasing volume via the Internet to gain additional savings.
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- E-commerce was the third element of the ‘e-readiness’ plan. It envisaged handling 25% of Siemens’ total business volume and 50% of the company’s consumer business online.
- The fourth element was the electronic networking of all of Siemens’ internal processes, or the so-called supply-chain management, which were being integrated and standardized to create a single, company-wide solution.
- Finally, ‘e-readiness’ envisaged marketing Siemens expertise in e-business to external customers.

Results of deconstructing the value chain at Siemens that were visible at the time when the empirical study was conducted included conducting 10% of the overall buy-side volume (equaling 35m Euro) online (von Pierer, interview, June 18, 2001).

Discussion: The field study presented a case in point, illustrating the deconstruction of industry value chains and the implications this had for the internal value chain at Siemens. All conjectures of the theoretical framework could be validated, including the separation of the flows of physical goods from information goods (Evans and Wurster, 2000: 15), the concomitant need to either compete on ‘rich’ information or on greater ‘reach’ in distributing this information (Evans and Wurster, 1997), as well as the implications this shift in emphasis entailed for value creation processes in the firm. In particular, it accentuated the importance of knowledge management as a key value-adder in deconstructing value chains (e.g. Hebeler and van Doeren, 1997; Shapiro and Varian, 1999).

7.2.2. Co-opting customer competence

Co-opting customer competence, particularly by Internet-enabled means, was in an emerging state at Siemens at the time of the field study. However, several initiatives were noticeable, particularly in the Top Plus Program and Ten Point Program. The Ten Point Program, especially, emphasized Siemens’ transition to an ‘e-company.’ Siemens’ approaches to co-opt customer competence were centering around Internet-enabled means, such as direct dialoguing with the customer through online-forums, customers directly posting urgent requests to Siemens employees, online chat rooms for customers on the Siemens home page, but also direct, face-to-face interaction with individual or corporate customers in the product development process (Davenport and Probst, 2000, 2002; Radomski, interview, December 10, 2000). Siemens’ commitment to co-opting customer competence was illustrated by von Pierer:
“First and foremost is customer orientation. Any company worth its salt these days has written this one in stone.... It means closely involving customers in every phase of the development process.... This intense partnership with customers has another positive aspect. Companies with the most demanding, the most knowledgeable and the most creative customers will trounce the competition in the end” (von Pierer, speech, June 19, 2000).

As part of the Ten Point program, customers had been integrated into the development process and consulted on which product features they really require and what sort of prices they were willing to pay. The surprising insight emerging from this endeavor was that the benchmark values determined during the process were up to 50% lower than standard market costs and prices. In one project at the Automation and Control group, for example, specifically in the area of machine-tool control technology, a product had undergone constant upgrading, and increasing modification for specialist applications. The result was an over-priced and over-segmented product range. The approach taken to rectify the situation was to consult key customers, conduct analytical studies to define, jointly with the customer, the optimum features for successful machine-tool controls and the viable market price (Neubauer, interview, November 16, 2001; von Pierer, speech, June 25, 2001).

It was very interesting to see how Siemens employees reacted to this unprecedented move to co-opt customer competence in order to obtain a clearer picture of the way in which Siemens products were perceived. In a speech, von Pierer remembered:

“The initial reaction to the identified requirements was ‘impossible in Standort Deutschland.’ Subsequently, a small, highly motivated team of developers was removed from their normal working environments and hence from their skeptical colleagues. The team was successful and the new generation of Siemens machine-tool controls was launched on the market, competitively priced and more efficient that the preceding generation” (von Pierer, speech, June 25, 2001).

In another example, Siemens used co-opting customer competence as an integral part of the account management system. An illustrative case in point is Siemens’ interaction with the corporate account customer Nestle:
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“[W]e sit down with our customers and determine what his future requirement will be, analyzing business possibilities and developing an action plan. We meet with our Nestle counterparts twice a year to discuss the value creation chains – the central question being, of course, what Siemens can do to optimize processes. This is because, obviously, we want to help Nestle to do better business.... What our customers want today is a strategic partner for mutual benefit, and that is why our approach has been a win-win situation for everyone concerned” (Siemens World, Volume four, 2001: 45-46).

As the quote above illustrates, co-opting customer competence was extensively practiced through ‘face-to-face’ meetings with individual or corporate customers, in order to uncover areas where joint value creation was possible. E-business offered unprecedented opportunities for co-opting customer competence through engaging in direct and in-depth dialogue with the customer. For a company with a long history of providing customer satisfaction, a logical question was: How can new technologies, such as the Internet, be used to engage in active dialogue and knowledge sharing with new and established customers in order to provide better products and services to them? (Davenport and Probst, 2000: 234).

In recognition of the central importance of e-business, Siemens founded the Center of E-Excellence in May 2000. It provided the impetus for transforming existing business models, and creating new business through the Internet, and selling self-experience E-business solutions. The Center of E-Excellence provided corporate-level support for existing e-business services and guidelines, facilitated sharing of best e-practices, and the mobilization of innovative e-business ideas. In short, the Center of E-Excellence sought to enable the progression from traditional to electronic modes of operating within the company, in which co-opting customer competence was a key element (Davenport and Probst, 2000: 231; participant observation June 1-3, 2000; Siemens World, Volume 1, 2001).

Siemens’ approach of co-opting customer competence was one of leveraging its expertise in knowledge management. Various media throughout the case-study evidence showed that traditional knowledge management centers on the intra-organizational context. In other words, it enables knowledge flows between employees. By contrast, co-opting customer competence broadens this perspective of knowledge management beyond the intra-organizational realm and also includes
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customers (Dachs, interview, November 8, 2001; Davenport, interview, May 31, 2000; Davenport and Probst, 2000: 234). As one knowledge manager commented:

“Traditional knowledge management systems tackle the problem of ‘if only we knew what we know’ – this has changed and turned into an ‘if only we knew what our customers know’” (Dachs, interview, November 8, 2001).

The key role of knowledge management in the process of co-opting the competence, the knowledge, and the skills of Siemens’ customers was illustrated by a quote from the head of the e-business transformation initiative at Siemens:

“Growing alliances, networks and collaboration among organizations have in the past largely ignored the customer. The Internet has changed this. It has empowered customers to engage in dialogue and knowledge sharing with the company. The valuable experience gained through years of managing knowledge now helps us to design Siemens’ e-business model to engineer this knowledge sharing.... Siemens has a firm understanding of and expertise in managing knowledge within corporate boundaries. The logical next step is to... extend the management of knowledge to customers. This represents an exciting and challenging task, because the barriers to knowledge sharing and networking in the intra-organizational context are exacerbated once the organization broadens its horizon to include its customers” (Goller, cited in Davenport and Probst, 2000: 237).

Several media in the case-study evidence demonstrated the potential contribution of co-opting customer competence to value creation. This was particularly evident in the Information and Communications unit. Here, it had traditionally been the customer who formulated a demand that was then forwarded by the salesperson to the telecommunication supplier’s ordering system. Then, in the solution-selling business, the salesperson himself often had to proactively present a business idea to customers, to help them develop innovative business strategies. This took the customer and the salesperson time, personal meetings, and negotiations before the objective of a project and some milestones could be defined. The challenge was that the customers often articulated their intentions and needs in broad terms only. Thus, the salesperson adopted the role of a business consultant, rather than a mere product seller. Effectively, what was traded between salesperson and customer was knowledge, and
much of this knowledge could also be exchanged via the Internet. This would alleviate the time needed for personal interaction, which ultimately reduces costs for both Siemens and its customers (Davenport and Probst, 2000: 236; participant observation June 1-3, 2000; Schoss, interview, November 21, 2001).

Discussion. While the most important conjectures of the theoretical framework were validated, there were also some differences with regard to the theoretical framework. To begin with the conjectures that were validated: first, the conjecture that the horizon of knowledge management had to be broadened beyond the intra-organizational realm to include customers found strong support. Hence, the Siemens case-study evidence clearly fulfilled the conditions of co-opting customer competence as presented by Prahalad and Ramaswamy (2000). It was furthermore found that Internet-enabled approaches in particular play a key role in co-opting customer competence. This is consistent with the most recent literature (e.g. Sampler, 2001). However, there was less evidence on a shift in power to the consumer as a result of, e.g. reverse auctions, than was expected in the theoretical framework. The reason for this deviation from the theoretical framework could be that the general interest in e-business activities was weakening at the time of the field study.

7.2.3. Co-evolving with the knowledge landscape

The Top Plus Program in itself represented a framework with the aim to enable a company to co-evolve with the competitive landscape, rather than achieving a static ‘fit’ with a stable environment. Senior management realized that deregulation and globalization fundamentally changed the business landscape. Indeed, the case-study evidence showed that the Top Plus Program was started as a response to the challenges posed. At the Shareholders’ Meeting in February 2000, von Pierer characterized Siemens AG as

“a living organism that must continually change and grow. In fact, change will always be one of the few constants in our company. We can sustain our success over the long term only - and that is the core point of all our portfolio measures - if we attain a leading competitive position in global markets for as many of our businesses as possible” (von Pierer, speech, February 24, 2000).

On occasion of the celebration of Siemens’ 150th anniversary, von Pierer even noted:
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“[I]t is also clear that a company is not a permanent, immutable object, but a living, dynamic organism. How else can one reach the age of 150 and older?” (von Pierer, speech, February 19, 1998).

Co-evolution with the knowledge landscape at Siemens took the form of ‘communities of practice’.26 A the time of the field study, Siemens was rated by an international commission as number three internationally and number one on a European level as far as the co-evolution through communities of practice was concerned (Davenport and Probst, 2002: 3). Within Siemens, communities of practice were perceived as an ideal way to overcome organizational and hierarchical boundaries, business processes and project-specific boundaries, as well as temporal, geographical, cultural and linguistic boundaries (Davenport and Probst, 2000; Krause, interview, November 12, 2001):

- Communities of practice provided the company with benefits such as the creation and deepening of new knowledge, the ability to detect blind spots within the corporation, and the identification and usage of synergies.
- Moreover, communities of practice facilitated best practice sharing, swifter and more flexible reactions to changes in the corporate environment, the discovery of potential for improvement and innovations, as well as the standardization of terminologies and business processes.

The two observations above could be corroborated in an interview with Siemens’ chief Knowledge Officer:

“Communities of practice exist in addition to the formal organizational structure. They cut across the structure, if you wish... In many ways, communities of practice can be seen as the lubricant for the formal organizational structure... communities of practice can be set up for a specific task at hand when the need arises, and dissolve after the need is no longer there.... This is what makes communities of practice immensely powerful for

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26 A Community of practice is a group of people who are linked together by a common ability or a shared interest, and consequently possess common practical experience, specialist information and intuitive knowledge. Members typically share information, experience and insights and are supported by various tools (e.g. Davenport and Probst, 2000).
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staying flexible, while maintaining the formal organizational structure” (Klementz, interview, November 20, 2001).

Several initiatives, on both business unit and corporate level, were found that demonstrated Siemens’ approach to co-evolution with the knowledge landscape (see Franz, Schmidt, Schoen, and Seufert, 2002). The phenomenon of communities of practice started in 1998 with a request for central support by the previously informal ‘Community of Practice Knowledge Management.’ This, as the name implies, is a knowledge community concerned with exchanging knowledge management expertise. This community started off with fifteen members. Over the years, Siemens initiated various knowledge-management activities and projects all over the world. People, who gained experience through these activities and met (more or less accidentally), began to exchange their experience and their knowledge. If a problem occurred, they would get in touch with one another. Informally, the members began telling one another stories about their successes or failures in the handling of knowledge until, finally, they formed the Community of Practice Knowledge Management (Enkel et al., 2002; Hofer-Alfeis, interview, November 21, 2001). After its inception in 1998, the community grew rapidly as a result of an ever-increasing interest in knowledge topics and the perception of the Siemens staff and management of the enhanced importance of knowledge. Its size made its continued existence as a self-organized community of employees concerned with knowledge-related topics, impossible. At the same time, the community wanted to involve more staff in actively contributing towards the transfer of knowledge across all hierarchical and group levels (Enkel et al., 2002; Hofer-Alfeis, interview, November 21, 2001; Klementz, interview, November 20, 2001).

During the field study, speed was frequently emphasized as the most important aspect of co-evolving with the knowledge landscape. As a matter of fact, the very attribute ‘top’ of the Top Plus Program, stood for ‘time optimized processes,’ or speed to market. The Top Plus Program was designed to take account of the pivotal significance of the time factor in a fiercely competitive environment. The comment that “it is no longer about the big beating the small, but the fast beating the slow” was often heard (von Pierer, speech, February 22, 2001; Dachs, interview, November 8, 2001). Speed to market was seen as dependent on three interrelated factors. First, rather than an anonymous organization, a small, highly motivated, highly competent, consensus-oriented team was required. Second, a holistic approach was required,
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which embraced the entire development process, from the assembly, distribution and potential customers. This integrated concept had to serve as the guiding principle for all activities. Third, an innovation-friendly corporate climate, infused with a sense of urgency, was seen as key. This required research and development to be regarded not as a ‘costly adjunct,’ but as a cornerstone for the success of the company (von Pierer, speech, June 25, 2001). The CEO of the Lighting business unit made the importance of speed in co-evolving with the knowledge landscape very clear:

“The crucial thing is to recognize economic downturns at the earliest possible stage. This allows you to deal quickly with unexpected setbacks by implementing targeted production cutbacks, workforce adjustments and savings on overhead” (Bopst, interview, October 16, 2001).

In order to maintain speed in reacting to sudden changes in the market, and in particular to recognize economic downturns at the earliest possible stage, the process of building communities of practice was divided in three phases (Klementz, interview, November 20, 2001; Krause, interview, November 12, 2001; Hofer-Alfeis, interview, November 21, 2001, Enkel et al., 2002) – the ‘start-up phase,’ the ‘run and improve phase,’ and the ‘winding-down phase:’

- **Start up phase:** The start up phase was called ‘pre-consideration.’ A detailed checklist was provided which potential community-initiators could consult to ascertain the extent to which initiating a community actually represented an appropriate approach to solving their current business problem. After this, the type of members that such a community would require was looked into. Interviewees considered it important to survey members’ common interests and motivate them. It was furthermore considered necessary to find a facilitator who planned and implemented the initiation. After this, a framework was set up that ensured the workability of the community. Finally the kick-off workshop was held. At this workshop members got to know one another, develop a joint understanding of the topics to be addressed, plan future activities, agree on common objectives, and organize the structure of the community (Davenport and Probst, 2000; Enkel et al., 2002; Krause, interview, November 12, 2001).

- **Run and improve phase:** When the community was established, it was considered critical that continuous improvement should take place. Having
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successfully initiated a community, it was considered important to sustain the momentum in order to develop and sustain active knowledge sharing within the community. Importantly, the community had to become an important component in the everyday work of its members, in order to ultimately benefit the Siemens corporation.

- **Winding-down phase**: The case-study evidence showed that communities should only exist as long as the individual members could see benefits for themselves and their business. The community was therefore constantly adapting to the changes that took place in a knowledge-intensive environment. If the community was no longer deemed relevant, or if its set goals were no longer applicable, the community was discontinued. If it became necessary to close a community down, a final workshop reviewed its activities, processes and outputs. Important aspects of the community’s knowledge were then either transferred to other communities or archived for later usage or usage, if required, in related knowledge areas (Krause, interview, November 12, 2001, Hofer-Alfeis, interview, November 21, 2001).

**Discussion**: Siemens’ approach to co-evolving with the knowledge landscape by focusing on communities of practices is consistent with the notion of ‘patching’ in co-evolution that Eisenhardt and Sull (1999) presented. In fact, the communities of practice approach mirrored Eisenhardt and Sull’s recommendations ‘for patching well’ (1999: 75-82). In particular, the recommendation that patching was an approach that co-existed with, rather than competed with, the formal organizational structure was supported. The importance of flexibility in patching was also supported (Eisenhardt and Sull, 1999: 78). The three phases in the community-building process, described above, demonstrate that membership in communities of practice was kept deliberately fluid and the individual member could decide when to drop out. Finally, the notion of speed as a prerequisite for patching well was clearly evidenced (Eisenhardt and Sull, 1999: 80).

Overall, although there was a good fit with the theoretical framework with regard to patching in co-evolving with the knowledge landscape, there was less evidence for communities of practice that spanned corporate boundaries to include partners, or competitors. This is perhaps not surprising: it would appear that a company needs to first build a deep understanding of the principles of building communities of practice.
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within corporate boundaries, before it endeavors to involve partners, suppliers, and even competitors.

7.3. Step three: Realizing imaginative strategies

The final step in challenging imagination (a) presents and (b) discusses the empirical evidence gathered for the three imagination levers following simple rules, focusing on heedful interaction, and building shared identity.

7.3.1. Following simple rules

Siemens used simple rules extensively throughout the three key projects investigated. To illustrate: the Ten Point Program can best be described as a list of ten simple rules that Siemens ticked off one after the other (Englberger, interview, December 10, 2001; direct observation April 9-10, 2002). Siemens’ approach to simple rules in the Ten Point Program was much acclaimed by analysts, while Siemens’ tenacity in following through the pointers stipulated in the Ten Point Program was admired throughout the business world (e.g. von Pierer, speech, December 14, 2000). Perhaps the best-known simple rule forming part of the Ten Point Program within Siemens was a series of concise statements that applied to portfolio management.

“I am convinced that we can achieve enduring success only by winning and keeping top positions in our markets. This is why our Ten-Point Program aims a placing virtually all businesses in leading global positions. If we do not achieve this goal with a business, we have four clear options: buy, cooperate, sell, or close. This is the guiding principle behind the new orientation of our business portfolio” (von Pierer, speech, December 2, 1999).

The goal behind the simple rules mentioned in the quote above was:

“to bring the businesses into leading market positions. If a business is weak, there are five options for reaching this goal: fix, buy, cooperate, sell or close a business. I have always made it clear that the first option is the best: fix that which isn’t working” (von Pierer, speech, June 19, 2000).

At the time of the field study, Siemens was active mainly in the ‘buy’ and ‘cooperate’ simple rules. In the buy category, Siemens had completed two major acquisitions in
the Power Generation Group, where two companies, Elektrowatt and Westinghouse, had been integrated. A third integration was underway, namely that of Atecs Mannesman, a company in the automotive supplier business that produced speedometers for passenger cars (von Pierer, speech, February 22, 2001; direct observation September 28, 2001). The ‘cooperate’ simple rule applied to Siemens’ forming a 50/50 joint venture with Fujitsu computers. This new company was intended to secure Siemens’ computer business over the long-term (von Pierer, speech, December 2, 1999). Another important example of the cooperate simple rule had been the partnering with the Japanese Company NEC in mobile phone development (Siemens World, 1, 2001; Mirow, interview, September 26, 2001). But simple rules could be found not only in the Ten Point Program. As part of the Top Plus Program, Siemens developed the so-called ‘power principles’ with the help of an international survey involving 8000 employees.

“The principles [of the Top Plus Program] point the way to the future for us. They help us orient our thoughts and actions. We need the principles... they bring us a common identity across the company. This is very important for an international company such as Siemens that employs people from so many different nations and cultures” (Pribilla, interview, October 14, 1998).

It was interesting to see in what way the new corporate guiding principles were expected to interact with the corporate culture. When asked how he expected the new corporate guiding principles to shape Siemens’ culture, the corporate human resources chief and member of the board, Pribilla answered:

“It’s the other way around. We didn’t simply invent or prescribe the guiding principles. They grew out of the values expressed by our employees. In other words, out of our culture. We discovered what these values were by means of an international survey.... Our principles represent the values and wishes of employees throughout the company” (Pribilla, interview, October 14, 1998).

In Operation 2003, there was also a clear focus on simple rules. However, the emphasis on simple rules was more emergent and less formally stipulated when compared to the other two key projects investigated. For example, in changing the strategy at Information Communication Networks, a straightforward simple rule was ‘revenue over volume’ (Ganswindt, interview, September 3, 2001). This simple rule
was not the result of a formal effort to instill simple rules in the company, but nevertheless recurred throughout various media in the case-study evidence (e.g. direct observation, October 23, 2001; von Pierer, speech, July, 25, 2001).

Discussion. Overall, there was an excellent fit between the theoretical framework and the empirical evidence. Examples of simple rules could be found in all three key projects investigated. The process by which these simple rules were generated was formal in two of the projects (Top Plus Program and the Ten Point Program), and emergent in the third project (Operation 2003). The observation of formal generation of simple rules is in line with recommendations in the literature, which argue that a deliberate effort to create simple rules is more desirable than an uncontrolled emergence (Eisenhardt and Sull, 2001: 110-112). It should also be appreciated that while the literature illustrates the benefits of formal generation of simple rules, it lacks concrete recommendations regarding the process of generating simple rules. The survey Siemens conducted to eventually come up with the so-called ‘power principles’ can therefore safely be seen as a worthwhile addition to the literature on simple rules.

Furthermore, the empirical evidence provided support for different types of simple rules. The ‘buy, cooperate, fix, or sell’ simple rule in the Ten Point Program should be seen as an illustrative example of at least two of the generic types of simple rules stipulated in the literature: exit rules (i.e. when to withdraw from a business in the corporate portfolio), and boundary rules (i.e. what business opportunities lie within scope and without scope). This provides a good empirical illustration of Eisenhardt and Sull’s theoretical conjectures (Eisenhardt and Sull, 2001: 109).

7.3.2. Focusing on heedful interaction

The literature-based theoretical framework emphasized two key aspects in focusing on heedful interaction: balancing internal replication of knowledge assets with their external replication. In other words, heedful interaction is about making knowledge fluid inside corporate boundaries, while controlling external replication, i.e. its flow outside corporate boundaries, for example in the long-term interaction with strategic partners.

While Operation 2003 placed less of an emphasis on heedful interaction, a key learning in the overall Top Plus Program was that in order to make knowledge flow
inside corporate boundaries, employees had to be purposefully motivated to not only use the knowledge of their colleagues elsewhere, but also to contribute their knowledge themselves. To this end, a sophisticated motivation and reward system, called ‘ShareNet Shares’ was introduced, which rewarded both the ‘giver’ as well as the ‘re-user’ of knowledge. Similarly, external replication of knowledge assets was controlled in a project ‘Venture Nurturing’ at the Information and Communications Networks business unit. This project was conducted under the auspices of the Ten Point Program. Both these projects are discussed in turn.

An interesting example of focusing on heedful interaction was found by studying the motivation and reward system called ShareNet Shares. The latter appertained to the Siemens-wide knowledge-sharing platform ShareNet, which was originally developed at Information and Communications Networks and later implemented on corporate level. Several interview partners consistently emphasized that to make knowledge sharing happen, interactivity was required on an inter-departmental, inter-divisional and inter-functional level (Klostermeier, interview, January 31, 2000; Loeckenhoff, interview, February 2, 2000; Klementz, interview, November 20, 2001). Interview partners emphasized that it was often difficult to accept and adopt another person’s knowledge, especially if this person was from another division or department. One interviewee commented on this ‘not invented here syndrome:’

“Sometimes knowledge which has been brought in from external sources, such as other Siemens departments or divisions, raises defense reactions. People often do not use it for the simple and stupid reason that they did not invent it. We have to develop people who can integrate suggestions from different origins and make a successful project from them. In short, make things happen, even if a project is composed of external inputs only” (Berres, interview, February 3, 2000).

In order to stimulate internal replication of knowledge assets, it was necessary to systematically identify and eliminate any organizational structures that could prevent knowledge from being shared, leveraged, and enriched by different functions and departments. A critical success factor, therefore, was the establishment of a motivation and reward system that removed the fears and anxieties that could prevent the exchange of knowledge across divisions and departments (Davenport and Probst, 2000: 205; Klementz, interview, November 20, 2001). To illustrate: knowledge, in
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particular tacit knowledge, was bound to a person. This meant that it could not be shared with others against such a person’s will, and raised questions about motivating people to share their knowledge. Interviewees explained that getting a person to enhance other people’s knowledge by voluntarily contributing his or her own did not happen easily. A further constraint was that knowledge sharing was considered a time-consuming and tedious exercise. This suggested that both the ‘giver’ as well as the ‘re-user’ of knowledge had to be motivated (Davenport and Probst, 2000: 206; Berres, interview, February 3, 2000; Klementz, interview, November 20, 2001; participant observation June 1-3, 2000).

The need to motivate and reward was therefore equally important for both the contributor or ‘giver of knowledge’ and the reuser or ‘taker of knowledge.’ The contributor, who received no direct reward for making experiences available, had to be specifically rewarded for the time invested in sharing his or her knowledge. The main reward for the reuser was the knowledge itself, which facilitated daily work (Davenport and Probst, 2000: 206; participant observation, February 22-23, 2001). For the reuser to benefit and thus gain the reward, ShareNet had to ensure that the available knowledge was truly useful. This was done through stringent quality control: the ShareNet Quality Assurance and Reward System was based on an airline’s ‘miles & more’ system. To illustrate: depending on the number of shares accumulated during a year, employees were awarded several incentives, such as conferences or journeys to attractive locations. The number of shares given to the contributor depended on the reuse feedback of the taker of knowledge, thus rewarding the usefulness of the transferred knowledge. The higher the usefulness of the knowledge, the higher the reward was. The feedback mechanism is an important part of the quality-assurance system, too. The quality of available knowledge could be quantified through reuse feedback from several knowledge reusers. Based on this feedback, knowledge of a low quality could be removed from Information and Communications ShareNet, whereas high-quality knowledge could be identified and developed further. Interviewees confirmed that this approach led to a constant improvement of the quality of the available knowledge (Davenport and Probst, 2000: 208; direct observation October 23, 2001; Klementz, interview November 20, 2001).

In the Ten Point Program, an example of focusing on heedful interaction not only internally, as was the case in ShareNet Shares, but also externally, i.e. with partners, suppliers, and competitors, was also provided by the Information Communications
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Networks business unit. The importance of focusing on heedful interaction was illustrated as follows:

“One problem associated with collaborating with competitors can be illustrated in solution selling. In selling highly integrated telecom solutions, Siemens could not do everything by itself, and had to co-opt the competence of other firms with which we also compete. An example is Cisco systems, the supplier of data management solutions. Siemens was forming a partnership with Cisco in combining Siemens’ expertise in telecom solutions with Cisco’s in data management. Some say Siemens eventually turned out to be the biggest re-seller of Cisco products, and ironically helped building up an enormous customer base for Cisco” (Schoss, interview, November 21, 2001).

The importance of focusing on heedful interaction when collaborating with competitors was corroborated in an interview with the assistant to the CEO of the Information and Communications business unit:

“There is a certain degree of duality. The boundaries between competitors and suppliers blur in the solution-selling business. We cooperate with a number of players, including Cisco, for example, in building local area networks for our customers. So these competitors are also our suppliers” (Berner, interview, November 15, 2001).

In response to the challenges of heedful interaction, a ‘Venture Nurturing Unit’ was formed in order to track innovations with the help of internal and external partners, and to select and implement ideas that could be converted into successful business ventures at Information and Communications Networks. The leader of the project described the work of his team as “scouting the world for people with ideas and a willingness to take risks inside and outside Information and Communications Networks” (direct observation, September 28, 2001). ‘Venture Nurturing’ also involved looking for promising firms in which to invest. Information and Communications Networks provided capital, logistical support and consulting services to these new venture ideas with the aim of gaining additional access to innovative products and technologies in careful interaction with external partners, many of whom were competitors (Berner, interview, November 15, 2001). Three
forms of focusing on heedful interaction in ‘Venture Nurturing’ could be delineated (direct observation, September 28, 2001; Berner, interview, November 15, 2001):

- If a Siemens employee generated the initial business idea, a ‘spin-off,’ i.e. an independent company, which developed from Information and Communications Networks and in which the group secured an equity stake, would be founded.
- If the initial business idea did not originate from within Information and Communications Networks, a so-called ‘start-up’ was established. When this had been done, Information and Communications Networks took a stake in this small, external company and assisted its founders with business development and marketing.
- A promising idea could also be passed on to an Information and Communications Networks business unit, where, as an ‘internal venture,’ it could then be converted into products and solutions and launched on the market.

Focusing on heedful interaction involved a three-step process: investigate, nurture, and develop. A business idea was first discussed with the appropriate business unit. If the unit was not interested in developing the idea, then a proposal could be submitted to the ‘Venture Nurturing’ unit. Here the idea underwent a thorough examination, involving question such as: what is special about the business idea?; how might it benefit the customer?; how might Information and Communications Networks benefit from it?; what are the preemptive measures that must be taken to ensure that the partnership surrounding the nurturing of the idea proceeds along tracks compatible with the original rationale of the partnership?; and what are the structural provisions that must be in place to ensure that adequate protection of intellectual property rights takes place? (direct observation, September 28, 2001; Berner, interview, November 15, 2001).

Discussion. There was a very good fit between the literature-based theoretical framework and the empirical evidence. The Siemens corporation saw a clear need for focusing on heedful interaction in the two key areas delineated in the strategy-making matrix. Thus, there was clear evidence of the need to balance internal replication of knowledge assets with their external replication, which was consistent with authors such as Teece (1998), Hamel and Prahalad (1998), and Grant (1996).
In addition to this, the case-study evidence provided a valuable new approach to focusing on heedful interaction, namely the so-called ‘ShareNet Shares.’ Since the literature on heedful interaction is still very much in an emerging state, the sophisticated motivation and reward system as part of the Top Plus Program must be seen as a welcome addition to the existing body of knowledge in focusing on heedful interaction.

7.3.3. Building shared identity

The literature-based theoretical part emphasized that in challenging imagination in strategy making, the established view of focusing on only shareholders or stakeholders, customers or owners of a business is one-sided. By contrast, shared identity, the final imagination lever in the strategy-making matrix, advocates an integrated approach: one that is geared to building shared identity among shareholders, and stakeholders such as the wider social and political realm, employees and customers.

Siemens pursued an integrated approach. Particularly noteworthy in this context is the Top Plus Program, which was defined to increase corporate value in an integrated manner, i.e. not only for shareholders, but for customers, investors, business partners, and employees. Von Pierer emphasized that it was necessary for Siemens to “attain world-class strength through learning and cooperation.... We are committed to learning from the best – from our most demanding customers, from leading companies in other industries, and from those in our company who demonstrate best practices” (von Pierer, speech, December 11, 1997; emphasis added). Thus, increasing corporate value was defined in an integrated manner at Siemens:

“in every part of our business, we want to make earnings exceed our capital expenditures. By the same token we want people outside the company to value us highly. Any increase in the value of the company will be directly reflected in our share price.... In addition to such short-term results, we also need sustained growth in the value of Siemens. This can only be accomplished by improving our competitiveness. Only then will we be the first choice of customers, investors, and employees, and only then can we guarantee long-term job security” (Wilhelm, interview, October 20, 1999).
In this context, von Pierer also emphasized:

“excellent technology is not enough. Above all, our employees have to be open to one another, ready and willing to learn and share their knowledge. We have therefore taken a number of concrete steps to encourage cooperation. For example, we have, as part of our Top Plus Program, reorganized the way we share information, experience and know-how. Through these measures, we are on the road to becoming a real learning company: an organization that *absorbs ideas from the outside world* by regularly benchmarking its activities against those of its best competitors and that *shares best practice examples internally*, holding up world-class achievements for everyone to emulate. And this is what knowledge management is all about: it is people business. That means the experience and abilities of our people are – and will continue to be – of ever-greater importance for our company’s competitiveness and profitability” (von Pierer, cited in Davenport and Probst, 2000: 3)

The field study demonstrated furthermore that Siemens had a 150 year history of *building shared identity*, starting with the founder, Werner von Siemens’ endeavors to provide for the leisure activities of his employees, to build parks, and organize recreational events (von Siemens, 1966). At the time of the field study, a new ‘Corporate Citizenship’ initiative was launched that gave new impetus to von Siemens’ original spirit (Siemens World, Volume 2, 2001, Pribilla, interview, February 14, 2001). Member of the board Pribilla, who was assigned to look into issues of corporate citizenship, explained its rationale as follows:

“Corporate citizenship is the social responsibility of a business corporation. It seeks to emulate the behavior of a ‘good citizen’ on corporate level, i.e. of a citizen who is actively involved in furthering the common good. To quote John F. Kennedy: ‘Don’t just ask for what the state can do for you, but also think about your own contribution to the common good.’ Corporate Citizenship is a basis for Siemens’ dealings with our partners... it is a key ingredient of our mission statement and we are active in all countries of operation” (Pribilla, interview, November 14, 2001).

The Corporate Citizenship initiative focused on seven areas of intervention (Siemens World, Volume 2, 2001), from learning, research and training, the environment,
public welfare to sports and leisure and arts and culture. The Corporate Citizenship Report was a formal publication of the Siemens company that was issued annually to complement the Annual Report, which focused primarily on financial data. Von Pierer described this integrated approach to corporate reporting as follows:

“As a global network of innovation, Siemens is a part of society, as a successful company.... We see ourselves as a corporate citizen, a member of society in all 190 countries where we do business – that is, in practically every part of the world.... In the Annual Report, the emphasis is on business success, company strategies, corporate messages, and company image.... The Corporate Citizenship Report provides details of all our social activities and the commitments we make to a more humane world. [Both] aspects form the basis for our thoughts and actions. They go together, they are interrelated and they are connected by the technical solutions and the knowledge of our 450,000 employees around the world” (von Pierer, Corporate Citizenship Report 2000: 3-4).

Another example of building shared identity is the Ten Point Program and its emphasis on an internationally compatible approach to financial reporting, i.e. the program’s concentration on one single performance measurement yardstick, against which performance was gauged consistently throughout the entire company. This performance yardstick was economic value added, i.e. profits less capital costs. Introducing economic value added as the standardized performance measurement yardstick helped Siemens to foster transparency and consistency among its units and local companies. In order to remain competitive in the future, all groups within Siemens therefore had to constantly increasing their economic value added (von Pierer, speech, November 14, 2001; Neubauer, interview, November 16, 2001). This was corroborated in another interview:

“With the new performance measurement approach... Siemens had also established a clear focus on rewarding earnings, rather than rewarding turnover. At the customer interface, this meant that sales representatives would no longer be rewarded for increasing turnover, but would only be rewarded for making a sale that would contribute value. Indeed, sales representatives would now be penalized for not selling in-house components of a solution” (Schoss, interview, November 21, 2001).
Discussion: There were similarities as well as differences with regard to the theoretical framework. As was expected in the theoretical framework, a strong emphasis on an integrated approach to building shared identity was evidenced by the case study, i.e. one that focuses not only on shareholders but also on stakeholders. The empirical study, with its strong emphasis on social responsibility and corporate citizenship, is in line with recommendations by scholars who advocate an integrated approach (i.e. one that simultaneously considers the business organization, the public, employees, and customers), and who explain that building shared identity is not necessarily efficient in the short term, but will lead to a better firm performance in the long term (Eisenhardt and Brown, 1998: 8; Hilb, 1997: 10).

However, there was less than expected emphasis on the building of shared identity with competitors in the case-study evidence, although some scholars had predicted that the increasing collaboration between former competitors would lead to a shared identity of former contenders (e.g. Lane and Maxfield, 1996: 228; Oliver and Roos, 2000; Moore, 1993). The reason for this lack of emphasis on the building of shared identity resides perhaps in the difficult market situation in the electrical engineering and electronics markets at the time of the field study, which created a sentiment of adversity, rather than collaboration among contenders.

8. Discussion of main findings

The empirical part of this dissertation started with three specific research questions that appertained to relevant overall aspects of the strategy-making matrix. These research questions were based on the theoretical framework and were used to guide the empirical analysis. The research questions were:

- In how far is it important to rigorously adhere to a specific framework in crafting strategy imaginatively?
- What is the relative importance of the three imaginations in crafting strategy imaginatively?
- What is the role and importance of sequencing the steps in crafting strategy imaginatively?

The interviews conducted with senior executive managers in the headquarters of the Siemens corporation have yielded a number of very interesting insights in terms of
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these questions. In this section, still drawing on the empirical evidence but at some distance from its specific circumstances, the three research questions are revisited, before moving on to the conclusions and implications of the entire study in the last chapter.

8.1. The importance of rigorous adherence to a specific framework

A defining characteristic of Siemens’ approach to strategy making was that it emphasized rigorous adherence to the framework decided upon by top management. The case-study evidence showed the consternation of top management when, despite the Top Plus Program’s proven track record and promise, it was not used rigorously or often enough in the company. In the words of the board member responsible for the Top Plus Program:

“Did we set our goals too high? Or were we wrong in our evaluation of the markets, the economic situation and the negative development of the New Economy? I’ll tell you what it was: We have the best toolkit in the world. It’s called Top Plus. But we are not applying it with sufficient rigor. We are not using this toolkit extensively enough or consistently enough in our company. This has to change!” (Wucherer, speech, June 21, 2001).

The importance of a more rigorous application of the Top Plus Program was underscored in various media throughout the case-study evidence (von Pierer, speech, February 18, 1999; von Pferer, speech, June 21, 2001; direct observation, October 23, 2001; Neubauer, interview, November 16, 2001). At the time of the field study, a Top Plus mosaic was even set up in the entrance to the company’s headquarters building in Munich, perhaps to further call attention the program’s sustained importance for Siemens and to stimulate its rigorous application.

The case-study evidence further demonstrated Siemens’ focus on long-termism and continuity. Throughout the entire field study, there was strong evidence of continuity as one of the keys in Siemens’ strategy-making approach (e.g. von Pierer, speech, January 22, 2001, direct observation, October 23, 2001; Mirow, interview, September 26, 2001). According to the Financial Times, von Pierer hopes that Siemens illustrates such “time-honored German corporate values such as concern with ... reliability and long-term thinking” (Financial Times, January 21, 2002).
In the words of the CEO, himself:

“Oh Siemens is proud of its 150-year-old tradition. And our Top Plus Program today bases its core elements on the values and strategies of our founder, Werner von Siemens. Part of this company philosophy is that we think and work with a view to the future. We don’t believe in the short term ‘get in get out’ strategy many believe we should follow” (von Pierer, speech, February 13, 1997).

Since the Top Plus Program was the umbrella project for the two sub-projects investigated, the Ten Point Program, and Operation 2003, the key projects investigated all emphasized the focus on continuity and rigorous adherence to strategy-making framework. Perhaps the best illustration of this approach to extend the current strategy without major shifts or quantum leaps was epitomized by the very motto of Operation 2003: “We stick to our targets – we do what we say” (von Pierer, speech June 13, 2001).

Finally, the empirical data have shown that the CEO made it very clear in several business conferences and annual shareholder meetings that Siemens is in fact not a company inclined to accept any discussion about the importance of a rigorous adherence to the strategy-making framework:

“[W]e have also repeatedly had discussions which hold up our work. Many of these discussions are superfluous. They cost time. They cost nerves. And they tie up resources that we urgently need elsewhere. This has to end” (von Pierer, speech, June 13, 2001).

Discussion: The long-term orientation of Siemens is in many ways the antithesis of the more recent strategy-making literature. In a well-known article, Mintzberg (1994) investigates the ‘fall and rise of strategic planning,’ concluding that strategy makers should act as catalysts who support strategy making by aiding and encouraging managers to think strategically, i.e. to break the existing frame, rather than to extend it (1995: 108). Likewise, Eisenhardt (1999: 65) has alerted her readers to approaches to unleash collective intuition, accelerate constructive conflict, and maintain decision pacing, rather than adhering rigorously to a strategy-making approach over time. Hamel empirically confirmed the importance of discontinuous strategy that nurtures a
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culture of ‘corporate rebels’ in detailed analyses across 20 industries (Hamel, 2000). This author emphasized the need to ‘develop corporate activists’ who rebel against ‘corporate apparatchiks’ (2000: 145). Thus, in contrast to the case-study evidence, the more recent literature provides conceptual and empirical evidence for the conjecture that rigorous adherence to a strategy-making framework is deficient.

The case-study evidence, however, ties in very well with the more established literature in descriptive imagination. To quote Porter: “Having a strategy is a matter of discipline” (Porter, 2001: 70). The distinguishing feature of descriptive imagination in strategy making is its propensity to focus on a ‘disciplined’ extension of the current strategy in line with the descriptions of the environment gathered through experience or analysis (Roos and Victor, 1999; Porter, 1980, 1985).

The apparent paradox between the foci on rigorous adherence to a specific framework and a more eclectic and serendipitous approach can be reconciled by the following quote by von Pierer:

“When a company like ours has endured and thrived for over 150 years, it might be tempting to rely on successful recipes used in the past. But today that would be fatal. And any recipe has a short shelf life. Imagine a pilot announcing on a flight: ‘I have some good news and some bad news. The bad news is we have lost one engine and our direction finder. The good news is we have a tail wind and wherever we are going, we are getting there at 600 miles an hour.’ Everybody would be rather upset at the news. Yet companies often fly like this plane – directionless, lacking purpose, being pushed swiftly along by the winds of circumstances” (von Pierer, speech, June 19, 2000).

Careful appraisal of von Pierer’s quote illustrates that the apparent paradox between consistency and openness to trends and discontinuities is the recipe for success in strategy making (see also Szulanski and Amin, 2001: 537, for an elaboration of this paradox). In other words, successful strategy making requires simultaneous consideration of long-term developments and interpretations of industry dynamics (descriptive imagination), careful appreciation of internal resources and core competencies (creative imagination), but also a readiness to question the existing wisdom (challenging imagination). In line with von Pierer’s contention, the strategy-making matrix therefore helps to identify and explain paradoxes, vicious circles,
dilemmas and tensions in strategy making that derive from the complex interplay of three imaginations in strategy making.

8.2. Relative importance of the three imaginations in strategy making

The strategy-making framework presented here offers a blueprint for thinking about strategy, and suggests answers to persistent questions and paradoxes that surround the topic. A key claim of the strategy-making matrix is that *no single one of the three imaginations is universally sufficient* to craft strategy imaginatively in the diversified firm.

There was strong evidence in the case study for all three imaginations. Although the three imaginations were present throughout the three key projects investigated, and in particular in the umbrella project, the Top Plus Program, some imaginations were *more dominant* in specific steps of the strategy-making process than others. To illustrate: the Top Plus Program started with a strong focus on internal firm resources and capabilities (creative imagination). Based on a thorough analysis of core competencies, decisions were taken to focus on certain competencies, while outsourcing others (Neubauer, interview, November 16, 2001). Due to fundamental external discontinuities, particularly in Siemens’ core business, the telecommunications sector, Siemens then moved into descriptive imagination, where the industry context was carefully analyzed and implications for the (re-) definition of core competencies were drawn. Eventually the company focused on purposefully defying ‘ways of doing things around here’ (challenging imagination).

Thus, all three imaginations clearly played an important role in the process of crafting strategy imaginatively. However, *creative imagination* seemed to be a *prerequisite* for the other two imaginations. Crafting strategy imaginatively was first and foremost based on a deep understanding of firm-idiomatic resources and competencies. Furthermore, particularly in diversified firms such as Siemens, the focus was on looking into ways to best exploit the synergies between the different competencies situated in the individual business units examined in the empirical study. The CEO, von Pierer, emphasized: “By focusing and combining the unique and unbeatable array of competencies within our company, we will keep the competitive edge” (von Pierer, speech, February 22, 2001). When asked what the core competencies of Siemens were, interviewees at corporate level would consistently name Siemens’ business
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units (e.g. Schwair, interview, December 13, 2001; Stuckenschneider, interview, November 22, 2001; Mirow, interview, September 26, 2001).

However, creative imagination also had its limits. Although creative imagination was the fundamental basis upon which strategy at Siemens was built, over-emphasis on core competencies could lead to a false sense of security and complacency among the individual business units that thought of themselves as ‘Siemens’ core competencies,’ or belonging to the ‘core business,’ and this called for challenging imagination. This is precisely what the CEO did when he questioned the fundamental focus on core competencies in the course of the third key project investigated, Operation 2003: “[T]he term ‘core business’ has more or less been stricken from our vocabulary, because it can lead to divisions that are labeled core business, feeling safe and protected by their dictum: ‘after all, we are one of the company’s core businesses - nothing will happen to us, no matter what our results are like’” (von Pierer, speech, June 13, 2001).

Finally, descriptive imagination added the important ‘external’ perspective on the industry environment and dynamics that put contingencies to the definition and development of core competencies. At the time of the field study, this focus on the external environment was very pronounced. Following an outstanding performance in the fiscal year 2000, Siemens started the year with great optimism, because the company’s growth curves of the fiscal year 2000 were extrapolated to the plans for 2003. Since then, however, Siemens has had to substantially scale back its expectations and at times seriously cutback the plans of the overall company and some of its business units, most notably the Information and Communications business units. The latter were characterized by a dramatic downturn in the mobile phone market, a technological shift in telephony technology toward Internet Protocol and optical networks, and weak investment activities by enterprise customers (von Pierer, speech, June 21, 2001; direct observation, October 13, 2001).

Discussion: The findings corroborate and extend findings of previous research, where literature was (a) inconclusive, (b) non-existent, or (c) not validated empirically. The empirical findings confirm the critical role of imagination in strategy making in general as proposed by authors such as Szulanski (Szulanski and Amin, 2001: 537; Szulanski and Doz, 1995), Hamel (2000; and Prahalad, 1994a), Kim and Mauborgne (1999a, 1999b), as well as Roos and Victor (1999). However, they also extend this
work in that for the first time all three imaginations, and thereby the three major perspectives in strategy-making literature, have been integrated in a holistic framework for crafting strategy imaginatively. The strategy-making case study in this dissertation further extends previous work in that, to the knowledge of the author, the findings presented here are the first comprehensive empirical validation of an integrated framework looking into all three imaginations. Only one previous article was found that mentioned all three imaginations (Roos and Victor, 1999). This article, however, was conceptual in nature and did not provide empirical evidence. In addition to this, the article focused only on a limited application of the three imaginations: it focused on what the authors call ‘serious play’ – a special form of strategy making which uses Lego bricks to visualize strategic thinking. Finally, in contrast to the present dissertation, the Roos and Victor article did not seek to define the three generic steps in the strategy-making process.

More generally, the empirical findings of this dissertation also extend the findings of Priem and Butler (2001a), who made a much-cited statement proclaiming that a “complete model of competitive advantage would require the full integration of models of the competitive environment with the models of firm resources.... The separate consideration and mutual exclusion of firm resources and competitive positions may reflect the state of the academic field, but is not an accurate reflection of the practice of strategic management. This artificial separation may be restricting our ability to fully conceptualize strategy making” (Priem and Butler, 2001a: 64).

The framework developed in this dissertation extends Priem and Butler’s observation of the need to integrate descriptive and creative imagination both theoretically and empirically. First, the strategy-making matrix extends Priem and Butler’s conceptual argument empirically by conducting an in-depth case study of a major diversified firm, which supports their findings. Second, the present dissertation extends Priem and Butler’s work theoretically in that the strategy-making matrix shows that a third aspect, challenging imagination, needs to form part of a complete framework, in order to accommodate the tendency of resource and competitive positions to erode over time. Consequently, it is believed that, when viewed together in their essences, the complementary designs of the three major paradigms reviewed yield a fuller picture of the foundations of strategy making (whereas Priem and Butler only referred to descriptive and creative imagination). The strategy-making matrix therefore builds on
the strengths of the major literatures in strategy (see the definition of key concepts in the first chapter), while attempting to eliminate their weaknesses.

8.3. Role and importance of sequencing steps in the strategy-making process

There was strong evidence in the case study confirming the three generic steps in the strategy making matrix, which this dissertation called envisaging, conceiving, and realizing. To illustrate, the very motto of the Top Plus Program reflected Siemens’ focus on the three generic steps. The motto was (von Pierer, speech, February 18, 1999):

- clear goals,
- concrete measures, and
- rigorous consequences (see Figure 10).

Figure 10: The steps of Siemens’ strategy making process (source: author).
The case-study evidence indicates that the process of crafting strategy imaginatively starts with determining the agenda with issues that are currently recognized as strategic at corporate or business unit level. At Siemens, strategic issues were defined as events, developments or trends that are potentially important for the future development of the organization. The first generic step in strategy making in the empirical evidence was about determining objectives, i.e. to determine a strategic direction for the firm and its divisions and business environments. Both the umbrella project as well as the two sub-projects reflected this. To illustrate: the umbrella project, the Top Plus Program, started with the setting of two clear goals. The first goal was the introduction of a new performance yardstick, against which performance was gauged consistently throughout the entire company. This performance yardstick was economic value added, i.e. profits less capital costs. Introducing economic value added as the standardized performance measurement yardstick helped Siemens to foster transparency and consistency among its units and local companies. In order to remain competitive in the future, all groups within Siemens had to constantly increase their economic value added. The second measure centered on innovation and growth, and defined clear goals and pilot projects. Five key leverage points were identified: portfolio optimization, reduction of tied-up assets, earnings-oriented sales, cost reduction, and quality (von Pierer, speech, February 18, 1999; Neubauer, interview, November 16, 2001). This was consistent with the theoretical framework, which emphasized that the first generic step in strategy making is about determining objectives, i.e. to determine a strategic direction for the firm and its divisions and business environments (Chakravarthy and Lorange, 1991: 4), and that envisaging strategy is about creating “a plan – some sort of consciously intended course of action, a guideline (or set of guidelines) to deal with a situation.” By this definition, strategies have two essential characteristics: they are made in advance to the actions to which they apply and they are developed consciously and purposefully” (Mintzberg, Quinn, and Goshal, 1995: 13).

The case-study evidence further demonstrated the setting of concrete measures as an important second step (conceiving strategies). In other words, Siemens understood that envisaging a strategy is not sufficient; a concept is needed that encompasses the resulting behavior. This step has been called conceiving strategies. While envisaging strategies focuses on the intellectual processes of ascertaining what a company might do, conceiving strategies focuses on deciding what a company can do, and bringing these considerations together in optimal equilibrium. Siemens focused on issues of
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portfolio optimization, the application of the Top Plus Program, the creation of new business opportunities, and personnel management (Neubauer, interview, November 16, 2001; Wucherer, speech, June 21, 2001; von Pierer, speech, June 21, 2001). Siemens’ approach was consistent with the theoretical framework, which emphasized that conceiving strategies encompasses activities such as assessing the organization’s ability to implement strategy (Eisenstat and Beer, 1994; Beer and Nohria, 2001), evaluating strategic alternatives (Lyles, 1994), budgeting and establishing action programs (Lorange, 1980). Thus, in line with the theoretical part, while envisaging strategies focused on the intellectual processes of ascertaining what the company might do, conceiving strategies focused on deciding what a company can do, bringing these considerations together in optimal equilibrium (Mintzberg, Quinn, Goshal, 1995: 57).

The third step in the Top Plus Program was ‘definite consequences,’ which correspond to the third step - realizing strategies - in the theoretical framework. The Top Plus Program prescribed holistic success measurement with balanced scorecards, incentive systems, and personnel development. The theoretical framework showed that realizing strategies is closely related to organizational learning, and encompasses nurturing capability for continuous innovation, energizing the organization, sustaining formal commitment to the strategy made, and maintaining an entrepreneurial spirit. Realizing strategies can therefore be seen as the logical step following the conception of a given strategy. It constitutes a feedback loop and its primary purpose is monitoring, control and learning. For example, at Information and Communications wireline networks, the largest business unit at Siemens, a team developed scorecards for all of its subdivisions and sales units. Since the scorecards comprised business drivers and related measures derived directly from the strategy, the initial phase focused on strategy development (envisaging strategies). The aim here was for management to reach a consensus on strategic targets and on the specific business drivers that must be influenced to reach these targets. In the second phase, business drivers were identified and the appropriate performance measures were defined (conceiving strategies). These so-called key performance indicators were defined by four teams corresponding to the four scorecard perspectives: market/customer, internal processes, employee/knowledge, and finances. At the conclusion of the second phase, the business drivers and performance measures developed by the teams were approved in a management workshop comprised of all members of management. In the third phase (realizing strategies), performance measures were linked to target
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figures and the means for realizing the scorecards were decided upon in order to enable organizational learning and through measuring progress along the key perspectives of the scorecard (Neubauer, interview, December 16, 2001).

It should also be appreciated, however, that while the three steps of the umbrella project investigated correspond very well with the theoretical framework, the sequence of the activities underlying these steps often took place in parallel or even reverse order. For instance, the Top Plus Project started with the setting of clear goals such as the introduction of the new performance yardstick, and the measures to achieve innovation and growth (Wucherer, speech, June 21, 2001). At the same time, however, the balanced scorecard project described above was started, and this project focused on realizing strategies. Thus, the case-study evidence showed that the first and the last step, envisaging and realizing strategies, could also be seen as parallel activities. In other words, there seems to be a feedback mechanism between the two. This feedback mechanism between envisaging and realizing strategies was confirmed in various media in the case study (e.g. Mirow, interview, September 26, 2001; direct observation, October 13, 2001; von Pierer, speech, June 21, 2001). So it seems that particularly the first and the last step of the strategy-making matrix constitute inextricably interwoven strategic activities, which is probably the reason for their overlapping to some extent in the present empirical study.

Discussion: Frameworks for strategy making that emphasize the process of making a strategy, such as the strategy-making matrix, but also major earlier frameworks such as Bower (1970) and Burgelman (1983), show the pattern of managerial activities involved in crafting a strategy, but are often inconclusive regarding the sequence of these activities. The present research has shown that while there is some simultaneity between the first and the third step of the strategy making process, three distinct steps can be delineated. It must also be emphasized therefore that the sequence of the three steps in crafting strategy was not linear. This is consistent with earlier findings of a seminal study, where it was found that the steps in the strategy-making process; “are interactive, recycle and repeat themselves and do not move forward in sequence” (Schendel and Hofer, 1979: 14). Thus, the overall findings regarding the three generic steps of the strategy-making process tie in very well with the theoretical framework and extend the findings of the major earlier frameworks by Bower (1970) and Burgelman (1983).
A word of caution is nevertheless in order here. Several researchers have emphasized that when researchers use a priori stages or steps to design their research and collect data, their results can easily become “self-fulfilling prophecies” (Poole and Roth, 1989, cited in van de Ven, 1992: 172). There may be other steps that are useful for thinking and learning about strategy-making processes. Further research is therefore needed to establish the factors that influence the sequence of these activities. Such research may also indicate which managerial activities are missing, or redundant in the present strategy-making matrix, and whether the pattern of sequential and simultaneous activities, as described here, needs modification. A key conceptual move for addressing this issue is to view the three steps as presented here as categories of events, and not to assume that these categories of events occur in any particular sequence or progression over time (van de Ven, 1992: 184). Thus, instead of viewing strategy making as a unitary progression of a linear sequence of steps, one is open to more empirical possibilities. These possibilities could include the conceptualization of process steps as forming a cyclic, divergent or convergent pattern (see van de Ven, 1992: 173).

8.4. Miscellaneous findings

Several researchers have noted the importance of openness to unexpected findings, in order to avoid becoming ‘locked into’ one’s research framework (van de Ven, 1992: 181). In addition to the overall findings in terms of the specific research questions that guided the empirical analysis, two unexpected findings of this dissertation are noteworthy.

- The first finding discusses the importance of designing the research on strategy making so as to actually be able to observe the process in real time, rather than retrospectively.
- The second finding concerns the role of consultants (both internal and external) in crafting strategy imaginatively.

Designing research to observe strategy making in real time. The empirical study was based on an embedded case study in one organizational setting (e.g. Yin, 1994, Eisenhardt, 1989). The case study was embedded because three key projects (the Top

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27 This, of course, is a limitation of all empirical studies using the pattern-matching method, which was also used in this dissertation; see the upcoming section on overall limitations in the next, concluding, chapter.
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Plus Program, the Ten Point Program, and Operation 2003) were investigated in one organization. While concentrating on one organization limits the generalizability of the findings, it also made it possible to gain access to sources with intimate knowledge of the details of the firm’s strategy-making behavior. The research capitalized on the opportunity to gain an understanding of the ‘managers’ contextual frame of reference’ (van de Ven, 1992, cited in Burgelman, 1994: 212). In particular, it was very timely to study strategy-making endeavors at Siemens, because at the time of the field study, the company was busy with a major strategy-making program, called Top Plus Program, as well as two related projects, called Ten Point Program and Operation 2003. It should be emphasized that this was very fortunate, since it allowed the researcher the opportunity of studying strategy making in real-time, thereby enhancing the construct and internal validity of the strategy-making matrix by avoiding problems stemming from retrospective data (e.g. through avoiding post-event rationalizations, see Burgelman, as well as Lovas and Goshal, 2001).

In contrast to the approach taken in this dissertation, most studies of strategy making to date have been retrospective case histories conducted after the outcomes were known (van de Ven, 1992: 181). The problem with this research design is that prior knowledge of the success or failure of a strategy-making effort invariably biases a study’s findings. According to van de Ven,

“While historical analysis is necessary for examining many questions and concerted efforts can be undertaken to minimize bias, it is generally better, if possible, to initiate historical study before the outcomes of a strategic... process become known. It is better to undertake real-time study of [such] processes as they unfold in their natural field settings” (van de Ven, 1992: 181).

This dissertation has found it very useful to follow van de Ven’s recommendations and the focus of the empirical investigation was on conducting real-time observations of the events and activities in strategy making as they occurred, without knowing a priori the outcomes of these events and activities. A major finding that might be interesting for scholars wishing to adopt this research design can be made on the basis
of the empirical study. The real-time research design requires significant commitment from the researched organization, from the researcher, and it requires organizational access, which few researchers have achieved to date and they have therefore favored the retrospective approach (van de Ven, 1992: 181). One reason for the difficulty in gaining this commitment and access is that the researcher has to effectively ‘sell’ the research questions to the host organization by emphasizing the benefits the research is likely to entail. This means that it can be extremely difficult not to influence the ongoing strategy-making process (i.e. the object of investigation) and still maintain a legitimate presence in the field insofar as managers would quickly be tempted to seek advice from the researcher and ask the researcher to intervene in the project as a *quid pro quo* for allowing further observations (see also Doz, 1996). The challenge for researchers here is to balance two issues: (a) the need to make executive managers appreciate the relevance of a given study in order to encourage them to provide access and information, and (b) to still maintain a critical distance. As van de Ven has succinctly summarized:

“At issue here is *not* that strategic management research incorporates issues of consulting practice. The issue is one of formulating and addressing important research questions that capture the attention and motivation of scholars and practitioners alike in the merits of studying them” (van de Ven, 1992: 181, emphasis in original).

*Role of internal and external consultants.* Van de Ven (above) leads us to an examination of the role of internal and external consultants in the strategy-making case study. Internal consultants played a major role in developing the frameworks underlying the three key projects investigated for this dissertation. Siemens had various internal consulting organizations that operated within the individual business units at Siemens, and one consulting ‘firm’ on corporate level, called ‘Siemens Management Consulting,’ which had to compete with the big external consulting companies. In addition to internal consultants, several external consulting companies were involved in the strategy-making projects investigated, including the Boston Consulting Group, McKinsey and Company, and Accenture.

The interplay of internal versus external consultants was complex, as it was not clear where the influence of internal consultants stopped, and where external consultants came in. Additionally, Siemens corporate development department saw itself as an
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‘external’ consultant, in that it benchmarked the performance of Siemens’ divisions against external competitors, and provided recommendations based on the comparisons made (Englberger, interview, December 10, 2001). On balance, the blurred roles between internal and external consultants did not seem to be a problem at Siemens, since the internal, Siemens, consultants provided consistency and resilience rather than ‘quick fix’ solutions, whereas external consultants often added a ‘fresh perspective.’ However, since only one interview was conducted with an external consultant (Davenport, interview, May 31, 2000), no final conclusions regarding the role of external consultants in crafting strategy imaginatively can be made. Clearly, further research is necessary to look into the roles of internal and external consultants in strategy making.
Chapter Four: Conclusions and implications

1. Conclusion

This dissertation developed an integrated framework for envisaging, conceiving, and realizing strategy imaginatively. This framework, the strategy-making matrix, combined previous work from the strategy process and strategy content research realms. The framework was empirically validated in a single-embedded case study of a major diversified firm in the electronics and electrical engineering industry.

The overall conclusion of this dissertation is that crafting strategy imaginatively requires the use of three distinct imagination thrusts, while taking into consideration the three steps of the strategy-making process. The three thrusts were termed descriptive imagination, creative imagination, and challenging imagination. The three steps were termed envisaging, conceiving, and realizing. By combining the three imagination thrusts and the three steps in the strategy-making process, the strategy-making matrix formalizes the individual propositions comprising the theoretical argument on two levels of granularity.²⁸

- The juxtaposition of the three generic steps of the strategy-making process with the three basic thrusts of strategy making yields a three by three matrix (comprising a total of nine boxes). This matrix can be seen as a keen and parsimonious conceptual scheme for thinking about imagination in strategy making.

- The strategy-making matrix identifies the activities, or, as this dissertation called them, the ‘imagination levers’ for each of the three thrusts in each step of the strategy-making process. Using this approach, a total of 27 imagination levers (three imagination levers for each of the nine boxes) comprise, and detail the theoretical argument of the strategy-making matrix. This conceptualization intends to offer a rich framework for crafting strategy imaginatively.

²⁸ The strategy-making matrix’ conceptualization of the overall theoretical argument on two levels of granularity supports findings of a seminal article by Eisenhardt (1989: 547), who argued that a hallmark of good theory is parsimoniousness and richness simultaneously.
The overall contribution of this dissertation can be assessed from a theoretical and from an empirical perspective. First, from a theoretical perspective, the overall contribution of this dissertation is that it integrates into a single framework a number of previously non-integrative theories from the strategy content and strategy process research realm (specific implications for each of these theories are given in the next section). To illustrate the theoretical contribution: following the recommendations by Bower (1970) and Burgelman (1983), the present study has found it useful to focus the analysis on particular strategic projects, rather than on the process of crafting strategy in general. The units of analysis therefore were specific strategy-making projects that were ongoing at the time of the research. This research has relied on three such projects. Analysis of these projects allowed the construction of a theoretically-based and empirically-grounded framework for crafting strategy imaginatively that described the sequence of the stages (envisaging, conceiving, and realizing) and their associated key activities in terms of the three different imaginations (descriptive, creative, and challenging). The primary level of analysis in building the theoretical framework was the corporate level; the secondary level of analysis was the business unit level. In line with the single-embedded case study method (Yin, 1994), this permitted insights into how strategy was being made at the Siemens corporation on the two levels of analysis in this dissertation. On the corporate level, the present research constitutes an in-depth case study of how one diversified, major transnational firm in a specific industry uses the activities in each step in crafting strategy imaginatively. On the business unit level, it allowed for the identification of steps and their associated key activities in six carefully sampled industrial settings (Information and Communications Networks, Information and Communications Mobile, Automation and Control, Transportation Systems, Medical Solutions, and Power Generation).

From an empirical perspective, this dissertation has made three important contributions. First, this study has provided valuable empirical data about a strategy-making process in a major diversified firm, which involved descriptive, creative, and challenging imagination. It should be appreciated that very few academics have previously had the opportunity to do such in-depth study of these three imaginations as they evolve in the context of one organization. Indeed strategy-making research has often been criticized for its lack of empirical grounding (e.g. Eisenhardt and Martin, 2000; Eisenhardt and Galunic, 2001; Williamson, 1999; Priem and Butler, 2001a). Scholars have explained this inadequacy due to the difficulty researchers have in
obtaining access to organizations: studying strategy-making procedures implies significant researcher commitment and organizational access (van de Ven, 1992: 181, Mintzberg, 1979b: 583). Only one previous study was found which included some elements of all three imaginations (Roos and Victor, 1999). However, in contrast to the present dissertation, the study was not empirically based.

Second, the dissertation has added valuable empirical data in the realm of disciplined imagination (Szulanski and Doz, 1995; Szulanski and Amin, 2001). Disciplined imagination refers to the process of introducing diversity in the strategy-making process, which is achieved by examining reality from a variety of perspectives, and by consistently applying a specific set of multiple frames of reference (Szulanski and Amin, 2001: 548). Judging from the most prominent thinkers of strategy making, this emphasis seems well warranted. Szulanski and Doz have made it very clear that “Perhaps one of the main hurdles for the progress of strategic management... has been and still is the absence of tools to map what people have in their mind” (Szulanski and Doz, 1995: 17). The strategy-making matrix is in the spirit of disciplined imagination, but also contributes and extends Szulanski and Doz’ findings. To illustrate: by emphasizing the consistent application of the three imaginations using a three-step approach, the strategy-making matrix attempts to provide a rigorous framework, one that consistently structures and systematizes what managers have in mind. This disciplined imagination in the strategy-making matrix manifests itself in the degree of consistency by which the three imaginations and the three steps are applied, which contributes to Szulanski and Doz’ findings. This dissertation also contributes to Szulanski and Doz’ work in that it provides detailed empirical evidence for the conjectures made. By contrast, Szulanski’s work with both Doz and Amin was either of conceptual nature (Szulanski and Doz, 1995), or was using anecdotal evidence, only (Szulanski and Amin, 2001).

Third, by framing strategy making as an imaginative, dynamic process, the present dissertation added valuable empirical data in the realm of dynamic capabilities. Eisenhardt and Martin have emphasized that imagination plays a key role in developing and nurturing dynamic capabilities (Eisenhardt and Martin, 2000: 1114). Very little is known about the management of dynamic capabilities (Eisenhardt and Martin, 2000) and their interaction with strategy making (Zollo and Winter, 2000). In particular, little is known about how dynamic capabilities interact with the three imaginations. Only two influential studies in the realm of dynamic capabilities were
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found (Eisenhardt and Martin, 2000; Teece, Pisano, and Shuen, 1997). However, these papers, while important milestones in their field, were conceptual in nature. Only one study was found that looked into the topic of dynamic capabilities empirically (Zott, 2000). However, in contrast to the present dissertation, the empirical data for the paper by Zott was based on a computer simulation, and not on an actually existing firm.

Fourth, this study provided valuable empirical data about a leading electrical engineering and electronics company that has previously been virtually inaccessible to scientific investigation. The inaccessibility of Siemens to systematic academic research seems noteworthy, since Siemens has often been referred to as “a bellwether of global industrial trends, as well as an icon of corporate Germany” (Financial Times, January 21, 2002: 9). Given that Siemens is a blue-chip company with a successful track record of more than 150 years, it is most remarkable that no previous research into the company’s strategy-making behavior was found. In the extensive literature review conducted for this dissertation, only one study that focused specifically on Siemens could be found (Kennedy, 1998). A second study (Kim and Mauborgne, 1997b) was found, which referred to Siemens’ strategy-making approach as one example among others. However, in contrast to the present dissertation, both studies focused on the strategy-making approach of one senior Siemens manager specifically (Gerhard Schulmeyer), and not on an integrated approach using all three imaginations, as does the present dissertation. This dissertation is therefore perhaps the most detailed study done on Siemens to date.

2. Overall limitations of the dissertation

The main conclusions and contributions of this dissertation as outlined above should be seen in the light of at least four limitations related to the generalizability, the analytic approach, the resource constrains, and the theoretical focus of this dissertation.

Generalizability: While grounded theorizing from single-embedded case studies has historically played an important role in the field of strategic management in general (e.g. Mintzberg and McHugh, Bower, 1970), and in the field of strategy-making frameworks in particular (e.g. Burgelman, 1983, 1994), such research suffers from the problem of questionable generalizability. Clearly, findings and propositions drawn from a single case study, like the present one, no matter how carefully sampled and
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researched, deserve to be regarded with a healthy caution (Burgelman, 1994: 53). In the present dissertation, this problem is perhaps less acute because of the purposefully wide variety of industries covered (Information and Communications Networks, Information and Communications Mobile, Automation and Control, Transportation Systems, Medical Solutions, and Power Generation, as discussed in section 4.2 on ‘level of analysis’ in chapter 3). This wide variety of industries covered is in stark contrast to the custom in other case-study research. The much-acclaimed frameworks by Burgelman, for example, focus exclusively on the high-tech sector (e.g. Burgelman, 1983, 1994). Similarly, Eisenhardt acknowledges that her research centers exclusively on the high-technology industry, which could severely compromise generalizability of her findings (e.g. Eisenhardt and Brown, 1998). Moreover, this dissertation has attempted to compensate for the limited generalizability by explicitly positioning the theoretical framework within two well-established theories (strategy process and strategy content research). However, it must still be acknowledged that the strategy-making matrix, as it is presented here, can lay claim only to being a tentative framework for crafting strategy imaginatively, and in need of further research and validation in a wider variety of contextual settings.

Analytical approach: The strategy-making matrix is the result of a qualitative pattern-matching method (discussed in section 3.2. on ‘data analysis’ at the beginning of chapter 3). While this pattern matching has been done carefully, and with great concern for issues of internal validity, construct validity, external validity and reliability, the patterns found necessarily reflect the conceptual lens used (particularly in terms of the three thrusts and the three steps conceptualization). This is a drawback of all deductive work that uses qualitative methods (see Burgelman, 1994 for a discussion of this drawback), and also represents a limitation of this dissertation. In this context, it should also be emphasized that the present dissertation is based primarily on the Anglo-American literature. The strategy-making matrix developed in this dissertation should be seen as an attempt at binding the set of managerial activities involved in crafting strategy imaginatively, but must be verified through further research. Such research should ideally be inductive, and attempt to approach the topic of strategy making deliberately, without using pre-fabricated concepts and categories, and should draw on literature sources other than merely those of Anglo-American origin.

Resource constraints. The most important resource constraint of this dissertation is that only one researcher conducted the research. It must be first and foremost
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appreciated that this investigator had only limited prior research experience, a resource constraint that Yin has emphasized (Yin, 1994: 55). Several academics have emphasized the benefit of conducting case studies in a team of researchers (e.g. Probst, 2000; Yin, 1994). One benefit is the so-called ‘researcher triangulation,’ i.e. the process by which researchers can discuss their findings and their interpretations thereof in order to obtain a balanced view of the object under investigation, and in order to help compensate for limited previous research experience (e.g. Stake, 1995; Reason and Rowan, 1981). Methodology scholars have argued that researcher triangulation can ensure internal validity through the reduction of systematic biases of the individual researchers (Glaser and Strauss, 1967). By sending the interview summaries and transcripts back to the interviewees for their appraisal within 3 working days for them to check for systematic biases in the interview accounts, the author of this dissertation hopefully compensated for this lack of researcher triangulation, and his limited previous research experience.

Theoretical focus. The focus of this dissertation was on strategy making, without paying explicit attention to the implementation of the strategy made, i.e. without focusing on strategic change (discussed in section 3.2.2. on ‘definition of the key concepts’ in chapter 1). However, several researchers have emphasized the interdependence of strategy making and strategy implementation or strategic change (e.g. Roos and Victor, 1999; Beer, 1994; Eisenhardt and Martin, 2000). At the heart of these studies is the argument that while it may be analytically convenient to separate the two concepts, their distinction would seem difficult to reconcile with the reality of strategy-making processes (see, e.g. Rumelt, Schendel, and Teece, 1994: 20; Schendel, 1992: 2). This complex connection between strategy making and strategy implementation or strategic change has been illustrated in the ‘Matrioshka approach,’ which suggests that both concepts can be seen as a set of Matrioshka dolls that fit within one another, to illustrate their interdependence (Hilb, 2001: 46). Nevertheless, despite or because of this interdependence, the concrete distinction between strategy making and strategy implementation has been a defining characteristic of strategy research since its inception in the 1960s and was also adopted for the purpose of this dissertation. This dissertation therefore acknowledges that, practically speaking, the making of a strategy and its implementation are interdependent processes, and should be seen as two sides of the same coin. In line with Learned et al. (Learned et. al., 1965: 17), crafting strategy, or the process by which a strategy is determined, was seen as independent from the process of actually implementing this strategy for

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analytical convenience. Clearly, further work would need to investigate both sides of the coin simultaneously.

3. Theoretical implications and further research avenues
The integrated framework developed in this dissertation is very helpful for deducing implications for existing major frameworks as well as for the advancement of theory through further research. The research reported here has supported a key statement in Priem and Butler’s seminal article, which proclaimed “a complete model of competitive advantage would require the full integration of models of the competitive environment with the models of firm resources.... [Their] artificial separation may be restricting our ability to fully conceptualize strategy making” (Priem and Butler, 2001a: 64; emphasis added). The findings reported here have also extended Priem and Butler’s notion of a ‘complete’ model, in that in addition to the frameworks associated with competitive environment (descriptive imagination) and firm resources (creative imagination), a third perspective needs to be included, namely challenging imagination.

This section attempts to deduce the major implications of the strategy-making matrix for existing theory and for further research avenues. The introduction to this dissertation gives the key concepts that underlie the theoretical framework, the strategy-making matrix (strategy-making, strategy process and content literature). The theoretical implications and further research avenues associated with this dissertation can therefore best be given in terms of the key concepts, on which the theoretical framework is based, namely the strategy making, strategy process and strategy content literatures. The section below (a) revisits these key concepts in the light of the empirical research findings and (b) discusses major implications for further research for each literature.

3.1. Implications for strategy making
This dissertation has provided several findings that suggest important insights for the field of strategy making. The key conclusion of this dissertation was that crafting strategy imaginatively in the diversified firm requires the use of three basic thrusts of strategy making, while taking into account its three generic steps. The thrusts were called descriptive, creative, and challenging imagination. The three steps of strategy making were called envisaging, conceiving, and realizing.
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The three basic thrusts and the three generic steps were juxtaposed to form an integrated framework. This framework should be seen as a valuable addition to the field of strategy making. As identified by Bower (1996), a key reason behind the limited progress in the strategy-making realm has been the absence of a careful modeling based on standard concepts (Bower, cited in Lovas and Goshal, 2000: 892). In the absence of a rigorous yet robust underlying framework, research in strategy making has unfortunately been neither focused, nor integrative.

By explicitly framing strategy making as an imaginative process involving three generic steps (envisaging, conceiving, and realizing), and three basis thrusts (descriptive, creative, and challenging imagination), the strategy-making matrix builds on a long tradition within strategy-making research. Mintzberg’s (1978) discussion of emergent strategy, Quinn’s description of strategy as logical incrementalism, Bower’s (1970) framework of the resource allocation process, and Lovas and Goshal’s more recent (2000) contribution to strategy as guided evolution, for instance, can be seen as imaginative in their underlying logic. In line with these major works, the strategy-making matrix claims that with the successive arising of new situations, reexamination of strategies is necessary to ensure the maintenance of effective alignment of strategy-making efforts with actualities. Thus, the strategy-making matrix shares the spirit of these frameworks by sharing the understanding of strategy making as an imaginative process: what is appropriate in crafting strategy depends on the situation and cannot be determined in a dogmatic or peremptory fashion.

Earlier contributions were, however, largely non-integrative and focused on either strategy process research literatures or insights from the strategy content realm. Although considerable research has been focused on strategy content in terms of specific industry structures (Porter, 1980, 1985, 1991, 1998, 2001), or resource structures (Barney, 1991; Prahalad and Hamel, 1990; Peteraf, 1993; Wernerfelt, 1984, 1995), less attention has been devoted to how these structures arise in the first place. In a similar fashion, while much strategy process research has examined contextual factors, decision-making processes, intuitive and analytic aspects (e.g. Mintzberg, 1976, and Waters, 1985; Pettigrew, 1985), less study has been done on specific managerial practices determining the origins of and the connection to these industry and resource positions. In other words, the conceptual development at the interface between strategy process and strategy content research has been in a preliminary state.
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(e.g. Schendel, 1992; Rumelt, Schendel, and Teece, 1991, 1994; Chakravarthy and Doz, 1992). This suggests that a major contribution of the strategy-making matrix resides in its attempt to develop the interface between strategy content and strategy process research by juxtaposing the three generic steps (based on strategy process) with the three kinds of imagination (based on strategy content).

Further research could build on the insights derived from the strategy-making matrix, and needs to investigate at least three issues:

- Further research needs to determine whether the conceptualization of strategy making as an imaginative process involving the complex interplay of the three imaginations and the three steps is idiosyncratic to the Siemens corporation, or whether the findings can be replicated in other firms and/or nonprofit and public sector organizations.

- Another interesting strand of inquiry could be to explicitly frame the three imaginations in terms of the contribution the firm can make to its stakeholders in particular. Stakeholder theory has burgeoned in recent years (see, e.g. Patsch, 2001; Friedman and Miles, 2001). Friedman and Miles noted that a dozen books and more than 100 articles on the subject had appeared since 1995 (Friedman and Miles, 2001: 1). It therefore seems timely to investigate if, and to what extent, the strategy-making matrix can be used to craft strategy imaginatively, i.e. so that the often disparate and diametrically opposed claims of different stakeholder groups are accommodated (Hilb, 1998).

- Additionally, scholars could investigate whether and how one or more of the three imaginations is brought into sharper focus than the others when the strategy-making matrix is used in different industries. An interesting conjecture to be tested here would be whether firms in more dynamic industries (e.g. the software industry) would place a stronger emphasis on challenging imagination. A similar investigation might explore whether firms in highly asset-intensive, static industries (e.g. the steel industry) would find it more difficult to challenge their established business model (and dispose of their extensive physical infrastructure), which would place a stronger emphasis on accurately capturing the dynamics within relatively static industry boundaries using descriptive imagination.
Such research can usefully combine units of analysis on various levels of aggregation. This dissertation studied three key projects, all of which were successful at the time of the field study. This could introduce a ‘survivor bias.’ It seems therefore expedient to also include unsuccessful projects in a given organizational context, in order to allow for comparisons between successful and unsuccessful approaches.

3.2. Implications for strategy process research

This study has provided several insights that could have important implications for strategy process research. The key conclusion of this dissertation is that crafting strategy imaginatively in the diversified firm requires not only three basic thrusts (descriptive, creative, and challenging imagination, for which the implications are discussed in the section that follows), but also needs to take into account the three generic steps of the strategy-making process (envisaging, conceiving, and realizing, for which the implications are discussed in this section).

The three generic steps in the strategy-making process were derived from a review of existing work in the strategy process realm. Process research in strategic management is concerned with how effective strategies are shaped within the firm, and has a long and rich tradition of investigating developmental processes that lead to the formation of strategy (Pettigrew, 1992: 6; Schendel, 1992: 2; van de Ven, 1992: 169; Chakravarty and Doz, 1992: 5-7; Mintzberg, 1973, Mintzberg and Waters, 1985). The three generic steps of the strategy-making process share the spirit of these contributions by sharing the understanding of strategy as emerging gradually over time, and that this emergence can be broken down in a limited number of steps.

Earlier contributions were, however, largely characterized by conceptual confusion: many methods of categorizing the strategy process exist, and wide-ranging efforts have been undertaken to bring simplicity and lucidity to this ‘crazy quilt of perspectives’ (Eisenhardt, and Zbaracki, 1992: 17). The result was a plethora of sometimes conflicting categorization schemes (Fahey and Christensen, 1986). While strategy-process research has seen a number of integrative frameworks (e.g. Hart, 1991, 1992, and Branbury, 1994), the literature review for this dissertation has established that these frameworks do not seem to be very influential, so that much terminological as well as conceptual confusion persists (Hamel, 1998; Eisenhardt, 1999, and Martin, 2000).
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The key question at the heart of this conceptual confusion has been the need to define the term ‘process.’ Building on van de Ven, researchers have interpreted the term ‘process’ as a sequence of events, i.e. as distinct steps of a given course that develops over time (van de Ven, 1992: 169-175). However, since van de Ven’s major contribution, researchers have been struggling with the question of how many steps are involved in this process (van de Ven, 1992: 172; Mintzberg and Lampel, 1999; Fahey and Christensen, 1987). Compounding this inadequacy is an apparent lack of attention to strategy process in recent years: authors seem in agreement that since van de Ven’s (1992) major contribution, strategy process research has languished through want of further research and does not seem to have progressed much (e.g. Hamel, 1998; Eisenhardt, 1999). The conceptualization of strategy process proposed by this dissertation as involving three generic steps, attempts to rekindle debate in strategy process by offering a most lucid and user-friendly interpretation of ‘process.’ As was argued by other scholars, this approach could be a logically consistent, standard conceptualization that brings simplicity and lucidity to strategy process research and that seems well suited, providing managers with practicable solutions (e.g. Mintzberg, Raisighani, and Thoret, 1976; Cohen, March and Olsen, 1972; Quinn, 1980; Mintzberg and Lampel, 1999; Lorange, 1980).

Comparing the strategy-making matrix to other substantive frameworks of strategy process research provides two valuable new insights. First, the strategy-making matrix is different in several respects from the well-known Burgelman process frameworks (Burgelman, 1983; including the various adaptations of this basic framework, as summarized in Burgelman, 2002). Strategy development in the Burgelman process framework was conceptualized in terms of levels of strategy making (business and corporate level) and in terms of levels of management (top management, middle management, and operational management). This approach purposefully emphasized the locus of strategy-making activity in terms of organizational structure at the expense of conceptualizing the strategy-making process steps, as attempted in the present dissertation. The strategy-making matrix is also different from the Burgelman framework in that it details the steps of this process in terms of the imagination levers, or activities associated with each step on the level of each of the three imaginations, whereas Burgelman provides very generic clusters of activities only (Burgelman, 1983: 227).
Second, the strategy-making matrix is different from Mintzberg’s framework, which depicts three modes of strategy making (the planning, adaptive, and entrepreneurial modes, see Mintzberg, 1973b; see also Mintzberg and Lampel, 1999 for the most recent elaboration of this basic idea). Mintzberg’s three modes of strategy making, based on cursory observation, seem to bear some similarity with the three imaginations that underlie the three-step approach of the present dissertation. However, Mintzberg’s framework constitutes a much more abstract description of a general ‘mindset’ of the strategy maker, and lacks the detailed activities and their sequencing that the strategy-making matrix provides in terms of the three steps and the three imaginations. In this context, it seems most disadvantageous that none of these substantive frameworks in the strategy-making literature reviewed considers the three types of imagination, or as this dissertation has termed them, the three basic thrusts in strategy making (descriptive, creative, and challenging imagination).

The insights generated by the present study have important implications for further research in strategy process. These implications can be grouped into three areas:

- In thinking of ‘process’ as a sequence of steps that unfolds over time, it can be useful to test the logic of the three steps in a different organizational setting. This exercise should be particularly fruitful in organizational contexts not naturally inclined to rigorous strategic processes. It should, for example, be interesting to see how entrepreneurs craft strategy in start-up companies or young companies with very few employees. Is strategy making in these settings more intuitive and inexplicable than in large organizations? It should furthermore be exciting to investigate if and to what extent so-called ‘serial entrepreneurs’ (i.e. entrepreneurs who repeatedly and successfully found a business, see Gartner, 1989) use the three-step approach. Such an evaluation of the three process steps in other organizational settings could be broadened to organizations in different industries in order to obtain a richer picture of the applicability of the three-step approach.

- The empirical research for this dissertation was based on a longitudinal, in-depth research design in one organizational setting. Future research could complement this research strategy by adopting a cross-sectional, rather than a longitudinal approach. Suitable research methods would ideally be large-scale surveys in different industries. As two scholars have emphasized, such research
should aim for intuitive, but supportable hypotheses in order to advance strategy-process research (see Huff and Reger, 1987: 226). Thus, for the field of strategy process to progress, it would appear that large-scale surveys could add valuable complementary insights into the sequence of the three steps, which are based on in-depth research in one organizational setting.

- Finally, the literature review of this dissertation has established that strategy process research draws from a variety of disciplines, including organizational sociology, decision sciences, psychology, political science, and ethics (Chakravarty and Doz, 1992: 7; Rumelt, Schendel and Teece, 1994: 24-40). It seems most remarkable that strategy process and has so far not drawn on what is perhaps its closest relative, i.e. strategy content. Indeed, as this dissertation claims, strategy content and strategy process research converge in the subject under investigation in this dissertation – strategy making. This suggests that further research could import insights from strategy content research in the study of organizational change and renewal, a topic area which was, for reasons of focus not included in this dissertation (section 3.2.2. in chapter one provides a rationale for this focus). For example, reengineering and restructuring, currently popular in academia and practice could benefit from the integrative approach in this dissertation that combines strategy process and strategy content literatures.

3.3. Implications for strategy content research

This study has provided several insights that can have important implications for the strategy content research realm. The key conclusion of this dissertation was that crafting strategy imaginatively in the diversified firm requires not only the three generic steps of the strategy-making process (envisaging, conceiving, and realizing), but also needs to take into account the basic thrusts (descriptive, creative, and challenging imagination).

The three basic thrusts in the strategy-making process were derived from a review of existing work in the strategy content realm. The extensive literature review for this dissertation has established that strategy-content research has provided three distinct streams of thought: dynamic interpretations of resource positions. The third perspective is developing as an outgrowth of the resource-based view, in that it represents the latter’s extension into dynamic markets. This dissertation has termed
these three perspectives descriptive imagination, creative imagination and challenging
imagination, respectively. Implications for these three streams of thought within the
strategy-content realm will be discussed below.

First of all, the study has demonstrated both theoretically and empirically that the
industrial organization view, or descriptive imagination, has important limitations. On
its own, the industrial organization view with its focus on industry structure and
dynamics could lead to a one-sided reflection of reality. This engenders two important
shortcomings. One shortcoming is that to the extent that the strategist’s attention is
focused on the industry (the outward perspective), important firm resources and
capabilities (the inward perspective) could be neglected. Another shortcoming is that
empirical validation of frameworks of descriptive imagination was mainly done in the
1970s and 1980s, a period that was characterized by relatively stable industry
environments and which lacked the highly dynamic nature of the current business
environment. Indeed, authors have emphasized that the current dynamism in business
environments is characterized by blurring and even vanishing industry boundaries
(e.g. Sampler, 1998). This calls into question the relevance of the frameworks
associated with descriptive imagination, which typically adopt a static definition of
industry boundaries (e.g. Porter, 1980; Henderson, 1979).

This study has shown theoretically and empirically that existing approaches of
descriptive imagination only represent one of a total of three important perspectives a
strategist needs to adopt in crafting strategy imaginatively in the diversified firm. In
other words, descriptive imagination needs to be supplemented by creative
imagination and challenging imagination. Creative imagination adds the important
‘internal’ perspective, i.e. on the creation and development of firm resources and
capabilities. Challenging imagination attempts to alert the strategist’s thinking to the
tendency of industry and resource positions to erode over time. Challenging
imagination is therefore vital for questioning the accuracy of the descriptions made in
the industrial organization view, and for questioning the sense of progress that is
associated with creative imagination. This study, in line with other literature (e.g.
Leonard-Barton, 1992) has shown that core competencies can quickly turn into ‘core
incompeptencies.’ Descriptive imagination constitutes an important complement to the
other two imaginations, in that it provides a deep understanding of the industry in
which the firm competes. An accurate definition of industry boundaries, along with a
careful diagnosis of the dynamics of an industry thus defined, establishing and
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defending a position within this industry are all important elements which contribute to the success of descriptive imagination in strategy making. However, they need to be supplemented by creative and challenging imagination.

Second, the empirical study has highlighted the role of the second thrust in strategy making, creative imagination. This dissertation has shown both theoretically and empirically that creative imagination has important limitations. One limitation is that by portraying organizations as bundles of capabilities and knowledge, creative imagination helps strategists to understand the links between resources and competitive advantage. This perspective also promotes awareness of the fact that identifying the most important, or ‘core,’ competencies is a fundamental starting point in strategy making. Creative imagination furthermore shows the benefit of leveraging internal resources, while co-opting other resources from external partners, all of which are essential issues to be considered when crafting strategy imaginatively. However, precisely this concentration on internal resources also bears a potential downside: the strong analytic emphasis on resource positions at the expense of the competitive environment. It should be appreciated that frameworks of creative imagination have been put forward in recognition of the simplifying assumptions underlying the industrial organization approach to strategy making (i.e. that of omitting resource positions from the framework). However, they also introduce yet another set of simplifying assumptions (i.e. that of omitting the competitive environment from the framework). This dissertation has provided theoretical and empirical evidence showing that the internal and external perspectives need to be considered alongside each other.

Another limitation of the frameworks in creative imagination literature would be their failure to acknowledge the tendency of resource positions and resource endowments to erode over time. In other words, the creative imagination literature does not accommodate the tendency of core competencies to turn into core incompetencies. Yet, the tendency of resources to become obsolete relative to the competitive environment, could critically affect the competitiveness of the firm (Leonard-Barton, 1992, 1995). It again seems most remarkable that although the resource-based approach to strategy making began as a dynamic approach emphasizing the development of resources over time, e.g. by advocating “balance between exploitation of existing resources and the development of new ones” (Wernerfelt, 1984: 178), several authors agree that much of the subsequent literature has been conceptually
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static (Teece, Pisano, and Shuen, 1997; Eisenhardt and Martin, 2000; Priem and Butler, 2001a). This drawback necessitates the inclusion of approaches to strategy making that challenge established wisdom, path dependent behaviors, and resource positions in firms. In other words, it would necessitate the inclusion of challenging forms of imagination in crafting strategy.

Third, this dissertation has provided theoretical and empirical evidence for challenging imagination, and has shown that this form of imagination also has important limitations. It must first and foremost be acknowledged that this stream of literature, while less established than the previous two, has great potential to focus our attention on a more informed and critical treatment of the concepts derived from the descriptive and creative imagination research realm. It should be particularly welcomed that the frameworks, if often implicitly, re-establish equivalent attention to product-market as well as resource positions of the firm, in that they argue that attention must be given to how resource positions develop over time relative to the competitive environment (see, especially, Hamel, 1996, 2001; Eisenhardt, and Sull, 2001). Challenging imagination was described in this dissertation as the mind’s negation of what it describes or creates, i.e. of the previous two imaginations; it is typically sardonic, and evokes a deconstruction of things or concepts previously held. This imagination contradicts, defames, and destroys the clarity generated by description and the sense of progress that comes from creativity (Kearney, 1988). Particularly in extant business environments, where resource positions can be eroded and devalued quickly (e.g. Eisenhardt and Martin, 2000; Burgelman, 2002), the challenging approach to strategy making should therefore be highly advantageous.

This dissertation has, however, also found that the very focus of challenging imagination on the negation of the sense of progress that can come with descriptive and creative imagination in strategy making could also be its downside. In its quest to defame and negate, challenging imagination in strategy making could fail to provide feasible alternatives to the negation of product or market, or resource positioning. In the words of Roos and Victor, it might have ‘nothing new to put on the slate,’ and could lead to ‘strategic nihilism’ (Roos and Victor, 1999: 351). This inadequacy strongly calls for imaginations that ‘describe’ and ‘create,’ rather than only defame. Indeed, the very process of falsifying and defying might require so much time and energy for its own operation that it could become a motivation in itself that is powerful enough, however curtailed it may be, to turn into a compulsive mode of
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behavior. It would appear that the trap inherent in challenging imagination in strategy making makes the complementing of challenging imagination with descriptive and creative imagination highly promising.

To summarize: upon theoretical and empirical analysis, the strategy-making matrix has contributed to the integration of the three major streams of thought in the strategy-content research realm. In this literature, earlier contributions were largely non-integrative, i.e. they focused on either industry (descriptive imagination) or resource positions (creative imagination), with some, limited, emphasis also accorded to challenging imagination. While the strategy–content research field has contributed considerably to our understanding of industry and resource structures (Prahalad and Hamel, 1990; Porter, 1980), cross-fertilization between pockets of scholars has been virtually absent in the strategy-content realm (e.g. Roos and Victor, 1999; Lissack and Roos, 1999, 2001; Eisenhardt and Galunic, 2001; Priem and Butler, 2001a). The strategy-making matrix therefore attempts to make a contribution by integrating previous streams of thought in strategy content research.

Future research in strategy content may find the following two issues worthwhile to investigate:

- Much research in strategy, including the present dissertation, centered on an established form of organization, namely the diversified firm (e.g. Chandler, 1962; Porter, 1980; Burgelman, 2002; Wernerfelt, 1984). However, in the evolution of large complex firms, new forms of organization labeled ‘non-hierarchical,’ ‘networked,’ or even ‘virtual’ have recently emerged (Hedlund, 1994; Evans and Wurster, 2000; Hamel, 2000). Several research questions that derive from the strategy-making matrix can shed light on strategy making in these new organizational forms. For example, what is the relative importance of each of the three imaginations in such new organizational forms? What is the role of partners and competitors in such a network in mediating strategy-making behavior along the three imaginations? Addressing these research questions could enrich the literature on strategy content research as well as enhance our understanding of how these new organizational forms function. In particular, work along these lines could provide deeper insight into the limits of effective hierarchies and provide some guidance for adopting other potentially feasible organizational forms.
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- This dissertation of a framework for strategy making does not, to be sure, look into the question of who is, or should be, making strategy in an organization. In particular, the role of middle managers in the process of crafting strategy imaginatively was not studied. As was discussed in the section defining the key concepts, reasons of focus as well as space constraints prevented discussion of issues such as the role of middle managers in crafting strategy imaginatively. While there is a whole body of literature on the locus of strategy-making behavior (see e.g. Thabur, 1998; Fredrickson, 1984, and Mitchell, 1984; Wooldridge and Floyd; 1990, 2001; Floyd and Wooldridge, 1996), none of these contributions have looked into the interaction of different hierarchical levels in the organization with the three imaginations. It should, for example, be very fruitful to investigate if and to what extent different managerial levels (e.g. top management, middle management, and line management), put different foci on the three imaginations.

3.4. Implications for specific elements of the strategy-making matrix

The empirical study also provided five important new insights with regard to the specific elements of the strategy-making matrix, where previous literature was either non-existent or inconclusive.

First, this study showed that while previous literature consistently emphasized the cash flow of individual units as the basis for decision making in balancing the investment portfolio, the Siemens case study emphasized synergies created, or future synergy potential among the businesses in the portfolio as the primary basis for decision making. In the words of the CEO: “when we see no synergies.... we pull out of the business, even it it’s profitable” (von Pierer, speech, January 19, 1998). Siemens’ emphasis on synergy potential should be appreciated as being more sophisticated than the conjectures in the strategy-making literature, which emphasize past cash flow. It should also be emphasized that Siemens’ focus on synergy potential is in line with recent literature on intellectual capital. This literature advocates future earning potential (rather than past cash flow) as the basis for portfolio decision making (e.g. Roos and Roos, 1996, Sullivan, 1998).

Second, with regard to configuring value chain activities, the case study demonstrated that Siemens purposefully involved corporate customers. This helped the company to get ‘the customer perspective’ on the usefulness of a particular value chain map
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(Halbherr and Howard, 1999: 13). For example, in one project, aided by the input of customers, the local Siemens company developed a high-level map of the solutions-selling process that identified broad categories of business-relevant knowledge necessary for each step. This showed that customers could play a key role in configuring value chain activities. By contrast, previous literature in strategy making (e.g. Porter, 1985) has simply encouraged managers to rely on their own judgments. Similarly, previous literature on knowledge management that advocated a more active role for the customer in corporate decision-making processes, mainly focused on a specific step of the value chain (particularly product development), rather than taking into account the entire value chain (see Prahalad and Ramaswamy, 2000: 81). The involvement of customers’ judgment in configuring the entire value chain can therefore be seen as a valuable addition to the existing literature.

Third, the case-study evidence provided evidence for the conjecture that the sales staff can be a deterring factor in propagating strategic intent and in crafting new products. Various media consistently validated this in the case-study evidence. For readers’ convenience, it is worth re-emphasizing the following quote by the head of Information and Communications Networks:

“If sales representatives have the opportunity to revert to selling the product they are used to, they will do so. This can be a problem, because you will find it difficult to push your new products. How does one remedy this situation? There is no ‘silver bullet’ answer to this problem. If you prevent your sales force from selling the old products, for example by adjusting motivation and reward systems, your core business goes down the drain, and with it an important source of cash for financing the fledgling business. However, if sales reps do have an option, they will continue selling the old product” (Spangenberg, interview, December 5, 2001).

It was particularly interesting to observe that those organizational members who are closest to the customer – the sales force – would be a deterring factor in propagating strategic intent. This seems counter-intuitive against the background of previous literature (e.g. Kim and Mauborgne, 1999a; Prahalad and Ramaswamy, 2000), which hailed the customer, or those in the organization closest to the customer, as the most important stimulus, rather than deterrent, in propagating strategic intent and in
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crafting new products. The case-study evidence shows that this assumption can be erroneous, which should be seen as a valuable new insight to the existing literature.

Fourth, the empirical study showed that ensuring coherence among the different business units in a corporate portfolio not only means developing synergies between the individual business units through knowledge management, but also to develop synergies between the individual knowledge management initiatives themselves. In an interview, Davenport had even analyzed that this could be a tension in Siemens:

“[A] tension in Siemens will be between knowledge initiatives that support the entire firm, versus those that advance a particular business unit or even a smaller group within it. Firm-wide initiatives help to exploit the scale of Siemens.... More specialized, focused initiatives will be more easily measured, and may be better supported by managers who are responsible for a unit’s financial performance” (Davenport, interview, May, 31, 2000).

The case-study evidence should be seen as a valuable addition to previous literature, which emphasized that knowledge management initiatives be focused on the requirements of a particular business unit, which makes the knowledge management initiative more relevant to the user, but often does this at the expense of looking into networking the knowledge management initiatives across business units (e.g. Davenport and Prusak, 1998; von Krogh and Roos, 1995). In contrast to earlier literature, the case study made it very clear that the most important commitment for ensuring coherence internally was creating synergies between the individual units by enabling the flow of knowledge between them while ensuring adequate best practice exchange between the knowledge management initiatives themselves.

Fifth, a final interesting new insight could be established, namely the finding that secondary and tertiary education systems can be a deterring factor in defying old paradigms and in surfacing counterproductive ‘ways of doing things around here.’ In particular, the German tertiary education system, which is characterized by high levels of specialization early on, can be a deterring factor in the attempt to defy old paradigms. The empirical evidence illustrated this. In the words of a senior manager at Corporate Technology:
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“After we leave school, and even in school, we are turned into specialists who no longer look left or right. Japan is another example of this approach.... This [approach] can be very effective when efficiency is the name of the game. The Japanese taught us a lesson in the eighties from which we have yet to recover. The problem is that the super-efficient company is not necessarily the most innovative company. Squeezing another drop of juice from our core competencies doesn’t do the trick in hyper-competitive environments in which our competitors are squeezing just as hard as we are. ‘Me too’ is a killer here” (Stuckenschneider, interview, November 22, 2001).

The interaction of national tertiary education systems with defying old paradigms could not be found in the literature and should therefore be seen as a valuable addition to the theoretical framework and to existing work in strategy.

Overall, with regard to the five new insights that relate to specific elements of the strategy-making matrix, future research can look into three issues. First, future research needs to determine whether and to what extent the above new insights regarding specific elements of the strategy-making matrix apply to other companies in the same industry, and under what conditions they apply. Second, this research could be broadened in scope to include other industries. Third, it should be particularly fruitful to conduct such research in a cross-cultural context. Previous research has demonstrated that variables of national culture significantly impact strategic process and should therefore not be kept constant (e.g. Hilb, 2000).

4. Practical implications

Two experts on imagination in strategy making have recently concluded that the full value of strategy making in practical terms cannot be realized until theorists expand the construct to reflect its imaginative processes (Szulanski and Amin, 2001: 551). Integrative frameworks of strategy making, such as the strategy-making matrix, provide windows into the ‘black box’ of strategy-making practice in diversified firms (e.g. Burgelman, 1983, 1994; Mintzberg, 1999; Lovas and Goshal, 2001).

In line with previous frameworks by Burgelman and Mintzberg, the approach taken here helps to identify and explain paradoxes, vicious circles, dilemmas and tensions in strategy making. For example, the strategy-making matrix shows how the process technology competence in selling highly integrated telephony solutions allowed
Siemens to be a technology leader in wireline networks and yet also bore the seeds of its failure in switching to voice over Internet protocol solutions later on. It explains how a vicious circle in resource allocation to the new voice over Internet protocol technology resulted from false an interpretation of the industry context (descriptive imagination), focusing on established core competencies, rather than creating new ones in line with the technology (creative imagination), and how failure to take the new technology seriously resulted from failure to question the prevailing competitive dynamics (challenging imagination).

Developing an integrated framework for a substantive practical area such as strategy making, helps produce categories and concepts that are somewhat rudimentary and evocative, but that are also closely tied to the phenomenon and enrich the repertoire of conceptualizing management practice. In the spirit of previous substantive frameworks, the framework in this dissertation attempts to bring method to the strategy-making efforts of senior managers with a formal process that would allow them to consider issues consistently and systematically (Burgelman, 2002; Doz, 1996; Szulanski and Amin, 2001: 541). In other words, frameworks such as the strategy-making matrix provide executive managers with a practical toolkit. In this respect, the present study has identified a three-step process - envisaging, conceiving, and realizing - as key categories in the process of strategy making. The strategy-making matrix, however, goes beyond these earlier works in that it has also demonstrated how the three imaginations - descriptive, creative, and challenging - shaped and mediated the categories associated with the three-step process, and how the three imaginations help conceptualize strategy-making activity. Linked together in an integrated framework, these categories and concepts attempt to keenly and parsimoniously depict the complex pattern of strategy-making practice, and organizational and industry forces that impact on managerial activity and show the underlying order and sources of sense-making in a process that, on the surface, looks chaotic (Burgelman, 1994; Doz, 1996).

A key strength of the strategy-making matrix is its flexibility. To illustrate: the framework developed in this dissertation can be used in two levels of granularity.

- On a cursory level the strategy-making matrix represents a simple, but not simplistic three-step framework for crafting strategy imaginatively by considering the three thrusts of strategy making. This approach is intended to
fulfil the KISS criterion (Hilb, 2001: 9, 237): Keep it Integrated (integration of strategy process and strategy content), Simple (three-by-three logic), and Stimulating (the focus on imagination in the strategy-making matrix). In other words, the strategy-making matrix reminds managers that ‘imagination’ implies not one, but at least three meanings: to describe, to create, and to challenge. The conceptual simplicity of this framework should be appealing to managers. The present dissertation has provided theoretical and empirical evidence for the conjecture that each of the three imaginations plays a unique, complementary and essential role in the making of a strategy. Crafting strategy imaginatively can therefore be seen as reliant on the complex interplay of all three imaginations, hence the term adopted in this dissertation, namely three basic ‘thrusts’ of strategy making. Each of the three thrusts of strategy making, while indispensable, suffers from a downside that demands the consideration of the other two that, in turn, shows managers the complementary potential of the three thrusts.

On a more fine-grained level, this dissertation provides detailed guidance for practicing managers in terms of the 27 imagination levers that comprise the strategy-making matrix. The 27 imagination levers attempt to provide a rich source of insight and stimulation for the strategy maker to think in a more detailed way about what each of the three thrusts of the strategy-making process entails. To illustrate: descriptive imagination starts with a careful definition of industry boundaries, upon which the dynamics within the industry thus defined are ascertained. Based on the implications of this analysis, resources are allocated and value chain activities configured, while balancing the investment portfolio. This helps the company to establish a position in the competitive environment and to defend this position against competitors. The long-term success in descriptive imagination is then ensured through discriminating generic strategies, and by cultivating competitive angst.

More specifically, there are at least three ways, in which managers can use the strategy-making matrix. First, and foremost, the strategy-making matrix can be a frame of reference for crafting strategy in a more imaginative manner, i.e. by simultaneous consideration of the three imaginations. From a practical perspective, the greatest potential of the strategy-making matrix resides in ameliorating the dismal situation that strategy making, while increasingly sophisticated, efficient, and rigorous
is apparently less and less imaginative (Roos and Victor, 1999: 348; Szulanski and Doz, 1995: 17; Szulanski and Amin, 2001: 537). When viewed together in their essences, the complementary designs of three imaginations can yield a fuller and more imaginative picture of the foundations of strategy-making practice. The strategy-making matrix furthermore attempts to make this conceptualization user-friendly by introducing three generic steps (envisaging, conceiving, and realizing), which should be appealing to managers.

A second way in which executive managers can use the strategy-making matrix is as a tool for ascertaining the level of sophistication of ongoing strategic processes in their company. This should be particularly welcomed in the current world of strategy-making practice, which is replete with perspectives focusing on the content of strategies, whether in the form of industry or resource structures. However, this literature may not be very helpful for the practicing manager, because “managers simply do not know what to do with all the wonderful concepts, frameworks, and buzzwords that tumble from the pages of the Harvard Business Review” (Hamel, 1998: 80). The framework built in this dissertation therefore helps managers understand the theory behind the concepts and techniques. Understanding the theory behind these techniques also promotes an awareness of the limitations of the techniques. To illustrate: industry analysis can be a very useful concept if the industry to be analyzed remains static. However, as pointed out by Priem and Butler (2001a, b), it might be inappropriate in circumstances where the industry is less static. Furthermore, it might neglect the important focus on internal firm resources and capabilities (Prahalad and Hamel, 1990). In other words, awareness of these techniques in terms of the strategy-making matrix helps managers develop a more critical and informed understanding of the limits of their current strategic processes. The strategy-making matrix can therefore be used as a training tool for managers in helping them to craft strategy imaginatively, which could be useful for ascertaining the level of sophistication of ongoing strategy-making activities.

Third, by framing strategy making as an imaginative process, the strategy-making matrix alerts managers to regard strategy as a never-ending journey, and not as an exercise that is to be conducted by a select few in the organization at the beginning of every quarter, or worse, still, only when firm performance deteriorates. From a practical perspective, this is particularly noteworthy due to the inattention to strategy-making procedures by many corporate boards, especially relative to the implementing
strategy, or ‘strategic change.’ where the conventional wisdom in business practice seems to claim that ‘95% is implementation’ (Roos, personal communication, June 2000). Regarding strategy as an imaginative process reestablishes the need to not only focus on implementing a strategy, but on the vitally important exercise that logically precedes the implementation of a strategy. Regarding strategy making as an imaginative process further highlights the need for building and nurturing internal expertise and knowledge to continuously challenge the established wisdom or the ‘way we do things around here,’ particularly by applying challenging imagination. Finally, regarding strategy making as an imaginative process emphasizes the need to constantly ‘be on guard’ for developments in the environment of the organization and to interpret these events and discontinuities in terms of the three imaginations.
References and appendices

1. Reference list (except Siemens references)


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3.2. Direct observation


3.3. Participant observation


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1. Appendices

1.1. Interview outline

Note: this semi-structure outline was used for first interview, only. Follow-up interviews were more structured in that they investigated in greater depth issues that arose in the first interview.

Introduction:

- Exchange business cards.
- Introduction of researcher (2 years at Siemens, Information and Communications Networks, and Corporate Knowledge Management).
- Introduce Ph.D. project (including strategy making matrix).
- Explain process (interview summary to be sent to the interviewee, happy to share results).
- Assure confidentiality.

Lead question

- I’m interested in the Top Plus Program. Can you tell me a little bit about your experience and evaluation of the Top Plus Program as a tool for achieving a strategic turnaround? I’m particularly interested in the background, context, and reasons behind the Top Plus Program.

Support questions (if applicable)

- Why did Siemens launch the Top Plus initiative? What was the background and competitive context?
- What are some important triggers that have lead to the Top Plus initiative?
- What are the aims, measures, and consequences of this initiative?
- What are the three things that are working well with Top Plus?
- What are the three things that are working not so well with Top Plus?
- If you were responsible for Top Plus, what would you do differently?

Close

- Ask for relevant internal documentation.
- Other literature?
- Probe for further contacts.
- Ask if the interviewee has any further questions.
Follow up

- Notify of interview summary – to be sent for appraisal within 24 hours. Additional comments, suggestions and ideas much-appreciated.
- Schedule follow-up interview (if applicable).

1.2. Interview summary cover-letter note

Dear (name of interviewee)

Many thanks for the very interesting and stimulating discussion. The results and findings of my dissertation project will be made available to you in November 2003. Please find attached a summary of the interview. As we discussed, I would very much appreciate your ascertaining if

a) I have understood everything correctly,

b) if you would like to add something.

If I don’t hear from you within three working days, I will assume that you are in agreement with the summary.

Thanks so much for helping with this.

With kind regards,
Michael Gibbert
2. **Curriculum Vitae**

2000-2003: University of St. Gallen, St. Gallen/ Switzerland  
Ph.D. candidate Institute for Leadership and Human Resource Management, Prof. Dr. Martin Hilb.

1998-2000: Stellenbosch University, Stellenbosch/ South Africa  
Master’s Degree in Commerce. Major in Strategic Management.

1995 – 1997: Hof University, Hof/ Germany  
Undergraduate degree.

1982-1992: Schloss Gymnasium, Mainz, Germany  
A levels (Abitur).