Configurations of corporate strategy systems in knowledge-intensive enterprises : an explorative study

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Jeroen L.C. Kemp

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Preface and Acknowledgements

During one of many stimulating discussions with my supervisors we have discussed the difference between 'Ist' and 'Soll' types of research. 'Ist' represents explorative research that observes the real world, in this case of management practice, with the aim to better understand it. 'Soll' represents normative research that formulates guidelines for practice with the aim to improve it.

In my daily work as an applied researcher and consultant at Fraunhofer, I have spent most of my time in the 'Soll' world, for example developing and implementing new strategic planning methodologies. In contrast, this PhD research has been a perfect opportunity to dive in the 'Ist' world and to explore a topic of great personal interest. My long-time mentor, Piet Moerman, made clear to me early down my academic road that this is what science should really be about: asking questions, being curious about the world around you and taking time to reflect. Even in applied scientific disciplines like economics and management.

A long, challenging and (at sometimes) lonesome task of conducting a PhD research can only be done when there is a deep interest and true curiosity about something. My interest for the topic of corporate strategy systems in knowledge-intensive enterprises developed during my studies at the Erasmus University in Rotterdam. Especially the innovation management programme by Frits Gosselink & Piet Moerman, the high-tech marketing course by Franta Koselka and the knowledge management study project with *'le manageur'* in the US have boosted my fascination for the strategic role of knowledge work and innovation in modern enterprises. My study on information systems has been elemental in turning me into a systems thinker. Furthermore, the internship at Fraunhofer and my master thesis on knowledge-intensive organisations have proven to be a strong foundation for my work in the last seven years. Finally, I have been inspired by a wide variety of publications from many management thinkers. Among those, especially Mathieu Weggeman's work on knowledge-intensive enterprises and Henry Mintzberg's work on strategy and configurations have been important for my research.

It was Confucius who said that real knowledge is to know the extent of one's ignorance. In this sense, this work is the result of enriching discussions with a number of people to whom I would like to express my deep gratitude. First and foremost I am grateful for the lively debates and the always positive guidance of my supervisors: Mathieu Weggeman, Jaap Paauwe and Piet Moerman. A special word of thanks to Mathieu for being a great first supervisor and for the kind invitation to give me an academic home at the Faculty of Technology Management in the Eindhoven University of Technology. Thanks to Jaap for supporting me, giving me confidence in case study research and emphasising the strategic role of human capital in today's enterprises. Thanks to Piet for always keeping me focussed on the main line of argumentation. Furthermore, my appreciation for the patience of all three for teaching me what real academic work means; it has been quite a transformation since my initial 'consultant slang'!

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1   Introduction

1.1   Prelude

This research focuses on the specific contexts of knowledge-intensive enterprises (KIE). In knowledge-intensive enterprises professionals play a dominating role in the primary day to day activities of the enterprise. Professionals can be for example problem solvers, consultants, designers, analysts, programmers, inventors or engineers. Their enterprises can be providers of professional services, manufacturers of engineered goods or developers of intelligent solutions. Knowledge-intensive enterprises can be found, among others, in the ICT, professional services and automotive industries. In comparison to other types of enterprises, knowledge-intensive enterprises have intangible assets such as human talent, intelligence or advanced technology as their core assets. They have to rely strongly on creative work, to posses strong problem solving skills and to invest heavily in the future. And these features are no luxuries, but are simply necessary capacities in order to compete, adapt and survive in the young, dynamic or volatile environments of the knowledge economy.

But how does a knowledge-intensive enterprise navigate through its environment? In what ways can a KIE chart its course for the future and positively influence its own development process? Is there an optimal way to form and realise strategies? This research sets out to explore what role corporate strategy plays in knowledge-intensive enterprises. In corporate practice different forms of forming and realising corporate strategies can be found. A young consulting start up has no planning process, and even its managers hardly find time to discuss about a strategic vision. In contrast a large and mature automotive enterprise has groups of people that are paid only for thinking long-term and conducting planning activities. Which of these two is better equipped for the future? Now take three ICT enterprises that all conduct planning activities regularly. One discusses about upcoming opportunities in the market. The second deals with making better use of its current resources. The third is busy formulating a mission statement. Why? Is any of these (or other) models of strategy formation and realisation better than the other? Or, does this depend on the particular situation of the enterprise? These questions, being the top of the metaphorical iceberg, provide a glimpse of the fascinating discipline of corporate strategy in knowledge-intensive enterprises. The object of study in this research is the corporate strategy system (CSS), which is the system of people and activities that are involved with forming and realising corporate strategies in the KIE. As a wide variety of knowledge-intensive enterprises exists, one could expect to find a wide variety of corporate strategy systems in practice. However, the starting assumption of this research is that such variety of practices can in essence be

brought down to a limited number of fundamental configurations. The main goal of this research is to explore if this starting assumption holds and if so, what these basic configurations look like. As an outcome, this research intends to provide a better understanding on the role that corporate strategy systems play in the development processes of knowledge-intensive enterprises.

1.2   Research Problem and Objectives

The main aim of this thesis is to explore what role corporate strategy systems play in knowledge-intensive enterprises. A knowledge-intensive enterprise (KIE) is an enterprise with mainly knowledge workers in the primary process or at least in the technical staff when this has a dominant influence on the functioning of the primary process [Weggeman, 1999]. The focus in this research is on the way such enterprises, which are understood as purposeful systems [Ackoff, 1974], form and realise corporate strategies. A strategy can either be a deliberate plan, or a non-deliberate pattern of decisions to reach a certain purpose. The corporate system that realises this plan and pattern of decisions is referred to as the corporate strategy system (CSS). From a systems thinking perspective, the corporate strategy system is a corporate sub system that fulfils one of the (main) functions of a knowledge-intensive enterprise, as it determines the overall course of corporate action. For a corporate strategy system to function, resources are made available (e.g. information and human resources), people are involved (e.g. CEO, management team, planning departments, line managers and employees) and activities are conducted (e.g. analysis, communication and decision making). From a systems thinking perspective, in order to understand the role of a system, its surrounding context needs to be understood as well. The context of the corporate strategy system entails both the internal and external environment of the knowledge-intensive enterprise. As depicted in the figure below, the research scope of this research thus comprises the corporate strategy system and its context.
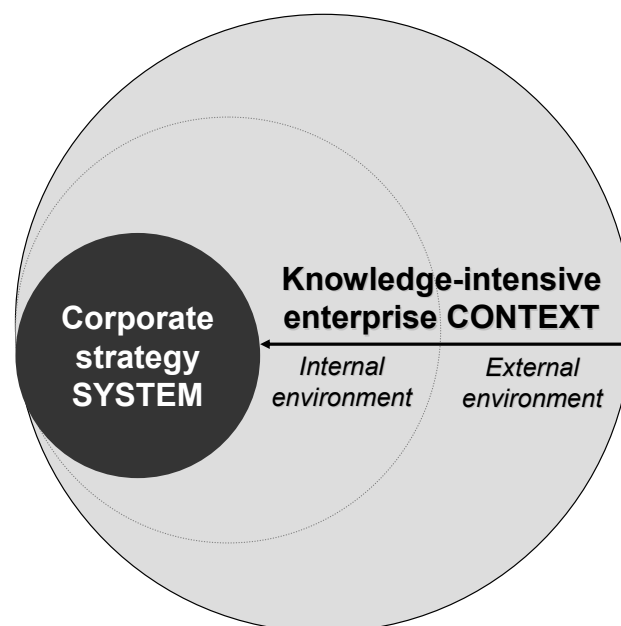
Figure 1-1: Research scope - Corporate strategy systems in knowledge-intensive enterprises

Term	Description	Example(s)
System	A set of interrelated elements comprising a whole.	Corporate strategy system
Element	The basic part of a system.	Person; resource; activity
Context	The surrounding environment of a system.	Internal & external environment
Property	A characteristic feature of a system or of its context.	Strategy format (system); Corporate maturity (context)
Function	A coherent set of tasks that a system fulfils. Relates to the purpose of the system in its context.	Composing a portfolio of businesses (CSS function)
Process	A logical sequence of activities conducted by a system in order to fulfil its function.	Strategy formation; Strategy realisation
Configuration	A commonly occurring cluster of properties that is internally cohesive.	Adhocracy [Mintzberg, 1983]; Informal Shaper (chapter 7)

Table 1-1: Research objects

The table above defines the main terminology that is applied throughout this thesis. The main variables that will be dealt with in this research are properties of both the corporate strategy system and its context. On the one hand properties are characteristic features of a corporate strategy system, such as the corporate planning formalization, the decision making flow (how strategic decisions are made) and change climate (how strategies are realised). On the other hand, properties characterise features of the internal and external environment of knowledge-intensive enterprises, such as environmental change pattern and corporate maturity. Whereas an element is regarded as a basic part of a system, a property describes distinguishing characteristics or features of the whole system (or of its context).

In line with the above, the guiding research question has been formulated as follows:

What are the distinctive properties of corporate strategy systems, and what configurations of these properties can be derived from studying knowledge-intensive enterprises?

Answering this question starts with the acknowledgement that the population of knowledge-intensive enterprises represents a wide diversity of organisational systems. In such a large population of knowledge-intensive enterprises, it can be expected that in the wide diversity of corporate strategy systems *"there is no one best way to create strategy, nor is there one best form of organization. Quite different forms work well in particular contexts. We believe that exploring a fuller variety systematically will create a deeper and more useful appreciation of the strategy process"* [Quinn et al., 1993] As a consequence this means that if we want to understand the nature and role of corporate strategy systems in typical contexts, we need to start getting a better grasp on the diversity of systems. Therefore, we need to understand the different functions and processes that a corporate strategy system can fulfil in a knowledge-intensive enterprise. Also, do we need to characterise the diversity of corporate strategy systems in knowledge-intensive enterprises through their most distinctive properties. Based on these considerations, the following sub questions are relevant:

What functions and processes do corporate strategy systems fulfill in knowledge-intensive enterprises?

What distinctive properties characterise corporate strategy systems in knowledge-intensive enterprises?

What distinctive properties characterise contexts of knowledge-intensive enterprises?

Even though a wide diversity of corporate strategy systems can be expected, the starting assumption of this research is that this variety of practices can be represented by a limited number of configurations. Configurations can be defined as commonly occurring clusters of properties or relationships that are internally cohesive [Miller & Friessen, 1984]. The motivation behind the search for configurations evolves from the assumption that *"there are only a rather limited number of possible strategies (and structures) feasible in any type of environment".* [Miller, 2001] In each type of knowledge-intensive context, a certain configuration of corporate strategy system properties is expected (*'different strategy systems for different purposes'*). Therefore, within this research the aim will be to discover if this expectation is justified and if so (1) explore and describe what the distinctive properties of corporate strategy systems and their context are for knowledge-intensive enterprises; and (2) explore and explain the ways in which the functions, processes and properties of corporate strategy systems are configured in each of the distinctive types of context.

A key motivation behind this exploration is that by developing and describing different configurations, a greater insight will be gained in the overall population of knowledge-intensive enterprises. This is because the configurations are considered to be exemplary types representing the whole population of enterprises to which they belong. This is in line with the common definition of a 'type' as *"… a perfect example; a model; a pattern; an archetype … in biology, a genus or species that best exemplifies the characters of a larger group and often gives its name to it"* [Webster's, 1979, p. 1979] In the domain of strategy theory this implies that by exploring and explaining the typical patterns of certain variables leads to a characterisation of the overall population of enterprises that is investigated. The amount of such types can be small, but they can represent a (very) large population of enterprises [Mintzberg, 1998]. Thus the final sub question is posed:

What are the types of contexts of knowledge-intensive enterprises and what patterns of corporate strategy system functions, processes and properties can be identified in each of these typical contexts?

We can conclude that this research aims to explore typical patterns of corporate strategy system variables in knowledge-intensive enterprises by developing a conceptual model, in the shape of a typology. This overarching aim can be linked to following *research objectives*:

- To obtain increased insight in the nature, behaviour and diversity of knowledge-intensive enterprises.
- To obtain increased insight in the current state of corporate strategy practice in knowledge-intensive enterprises.
- To gain an understanding of the main functions and processes that a corporate strategy system can fulfil in a knowledge-intensive enterprise.
- To elaborate a set of properties that provides a conceptual framework for understanding and classifying different corporate strategy systems and their contexts in knowledge-intensive enterprises.
- To explore the patterns of fit between corporate strategy systems and their contexts in knowledge-intensive enterprises.

On the one hand, the outcome of these explorative investigations will open up a much wider field of systemic research on patterns of corporate strategy system variables in knowledge-intensive enterprises. On the other hand, the results of this work will provide increased insight into what types of corporate strategy systems 'naturally fit' within certain types of knowledge-intensive contexts.

1.3   Research Design

The main aim of this research is to develop configurations of corporate strategy systems in knowledge-intensive enterprises. In the construction of configurations, this study draws on the experiences from a longer tradition of strategy research in the configuration school [e.g. Miller & Friessen, 1984; Mintzberg, 1998]. More specifically, the aim is to develop conceptual configurations, which are typically qualitative in nature and are also referred to as 'typologies'. [Miller and Friesen, 1984] According to Miller [1996], successful conceptual configurations have to possess at least the following features:

- The various strategy types are *well informed by theory*;
- They invoke contrasts that facilitate empirical progress, that is, they *resolve persistent debates and conflicts*;
- The variables used to describe each type are shown to *cohere in thematic and interesting ways*, ways that have important conceptual, evolutionary or normative implications.

Much value is placed in this research on empirical material through numerous expert interviews and case studies. The research strategy makes use of explorative multiple case studies [e.g. Eisenhardt, 1989; Paauwe, 1989; Yin, 1993]. Following the principles of conducting strategy research in the configuration school, the construction of configurations grounded in the case studies is a process with two main phases:

- *Exploration of functions, processes and distinctive properties* of corporate strategy systems and contexts in knowledge-intensive enterprises: this includes a cross case analysis in order to determine the properties of system and context, as well as the functions and processes of the corporate strategy system.
- *Construction and description of conceptual configurations* of corporate strategy systems in knowledge-intensive enterprises: this includes a cross case analysis in order to explore the patterns of relationships between context and system properties, as well as the formulation of propositions about these relationships.

This research is an explorative quest for developing internally logical and practically valuable patterns of corporate strategy system properties within typical contexts of knowledge-intensive enterprises. This implies, as in any explorative research [Eisenhardt, 1989; Silverman, 2000], that the end result is in itself a hypothesis, or a beginning of a new theory. The research roadmap has been based primarily on Eisenhardt [1989], Weggeman [2001], Paauwe [1989], Yin [1994] and Miller & Friessen [1983]. The research roadmap, as depicted in the following figure, is designed in order to conduct an explorative, theory building multiple case study research with the aim to construct conceptual configurations.

Research problem definition	Literature study and expert interviews	Research strategy	Case studies	Configuration building (cross case analysis)	Evaluation and conclusions
	• Knowledge economy and industries • K-intensive enterprises • Corporate strategy systems	• Starting assumption and frame • Case study selection (sampling) • Data gathering instruments	• Twelve case studies data collection • Case analysis	1. Exploration of properties of CSS and context 2. Constructing configurations of properties	• Comparison with literature • Theoretical saturation

Iterative exploration & synthesis

Figure 1-2: Research roadmap of activities

The two cross case analysis phases are conducted iteratively, switching back and forth between conceptual models, propositions (the start of a new theory) and the empirical data. This is in line with the nature of the process, as for developing theory from case studies it is necessary [Eisenhardt, 1989, p. 541] to *"compare systematically the emergent frame with the evidence from each case in order to assess how well or how poorly it fits with case data. The central idea is that researchers constantly compare theory and data – iterating toward a theory which closely fits the data."*

After the *research problem definition* (see previous paragraph), the literature is researched and analysed in the core areas of this study – knowledge-intensive enterprises and corporate strategy systems. The *literature study* is complemented with a number of expert interviews. The main result of this step is a better understanding of the state of the art in theory with regard to answering the research question. The main results of the literature study are described in chapter 2 'State of the art'. The *starting assumption* behind this research and the *orientation points* for a theory on configurations of corporate strategy systems in knowledge-intensive enterprises are made explicit in chapter 3 'Towards a theory of configurations'. Although theory building studies should preferably start from a theoryfree state [Eisenhardt, 1989], in practice this is not realistic. Therefore, before starting the empirical data collection, the starting conceptual frame has been made explicit. Based on the research question statement, the overview of current research and the starting assumption, the *research strategy* is developed, the research instruments are developed and the cases are selected, as described in chapter 4 'Research methodology'. With this research strategy, the data collection is conducted and the *case studies* are analysed. For this research, an empirical investigation is conducted consisting of twelve case studies. The case studies are conducted along the quality requirements for explorative, multiple case studies research [e.g. Eisenhardt, 1989; Paauwe, 1989; Yin, 1994]. The case studies are selected to cover a theoretical sample of knowledge-intensive enterprises using on the one hand the form of the enterprise (distinguishing small/medium, large and networked KIE) and on the other hand the type of knowledge-intensity (distinguishing information-intensive, talent-intensive and technology-intensive enterprises). The case studies are described in chapter 5 'Case studies'.

After that a process of *cross case analysis* is conducted in order to *determine the distinctive context and system properties*, as well as the functions and processes of corporate strategy systems. The resulting set of properties represents a classification scheme for the whole population of corporate strategy systems in knowledge-intensive enterprises and together with the functions and processes are the building blocks for the construction of the typology. The functions, processes and properties of the corporate strategy system and the properties of its context are described in chapter 6 'Cross case analysis: functions, processes and properties'.

Based on these building blocks, the next step of the cross case analysis *explores the patterns of relation* between them. The in depth study of the cases is used to understand the pattern of relationship that exists between the various building blocks. The synthesis of the different patterns as observed in the case studies results in a number of formulated propositions. These propositions determine the main relations between typical contexts and the configuration of corporate strategy system functions, processes and properties within knowledge-intensive enterprises. The propositions represent the fundamental structure of the configurations, which are detailed and described in chapter 7 'In search of configurations: a synthesis'. The resulting configurations are firmly grounded in the empirical material of the

case studies. Moreover, they are compared with conflicting and supporting literature. Also the properties and configurations are checked with experts and practitioners (from partners of the case study enterprises). This iterative cycle is repeated until theoretical saturation is reached and the configurations represent a robust and internally consistent model that is considered representative of the whole population of knowledge-intensive enterprises.

In a last and final step the research findings are compared with the initial research question and *implications* of the unfolding theory, e.g. for practising managers and future research, are identified. This is described in chapter 8 'Discussions and conclusion'.

1.4   Research Relevance

The societal relevance of this research can best be understood through the relevance of the knowledge economy in general and knowledge-intensive enterprises in particular. The impact of the knowledge economy on people's work, life and on business is broad and diverse. All sectors of the economy are impacted by the main drivers behind the knowledge economy. The impact of this evolving socio-economic constellation is considered to be better understood by zooming in on the focus group of enterprises, i.e. knowledge-intensive enterprises. Overlooking the global economy as an organic system, the growing importance of knowledge-intensive ecosystems, or industries, can not be denied. Knowledge-intensive industries already make up a share of economic value add [1] in developed countries that is more than one third [OECD, 2004]. A study by the Work Foundation [2] of 2006 [Brinkley & Lee, 2006] finds a similar figure of around 40 per cent in 2005 specifically for Europe and the US. Knowledge-intensive industries are in most cases the fastest growing areas of economic activity in developed countries [NEI, 2001]. Some estimates claim that *"technology and knowledge based industries created 2.5 times more net jobs than the rest of the economy between 1995 and 2005."* [Brinkley & Lee, 2006, p. 7]

But, it is not only the enterprises in knowledge-intensive industries that have a growing importance for the overall economy, in general the importance of intangible assets and knowledge work for the value of enterprises has risen sharply over the last decades. For example *"intangible assets – ranging from a skilled workforce to patents to know-how – account for more than half of the market capitalisation of America's public companies … intangible assets have shot up from 20% of the value of companies in the S&P 500 in 1980 to around 70% today."* [Economist, 2006, p.4] Also, knowledge work within industries that are not typically classified as knowledge-intensive industries is growing: *"An increasing proportion of all new jobs are for knowledge workers. Even many of the workers in factories today are not manual production workers, but workers managing machines, handling information and making decisions based on their knowledge of the production processes."* [Skyrme, 2003, p.86]

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[1] OECD [2004] considers as knowledge-intensive industries: producers of high-technology goods and activities (including services) that are intensive users of high technology and/or have the relatively highly skilled workforce necessary to benefit fully from technological innovations: *„In 2000, high and medium-high technology manufacturing accounted for about 8.5% of total OECD value added, and knowledge-based "market" services accounted for 19% (including education and health, about 30%)."* [OECD, 2004, p.4] Together this implies that 38,5% of total OECD value add comes from knowledge-intensive industries.

[2] This study [Brinkley & Lee, 2006] finds *that "In 2005 just over 40 per cent of the European workforce was employed in knowledge-based industries as defined by Eurostat"* [p. 6]. They find a similar figure for the US*: "Overall, employment in knowledge-based industries in the US in 2005 appeared to be about 38 per cent, roughly comparable to the EU average"* [p. 10]. In Europe (as in US) the largest part of these jobs are in services: *"The vast majority of jobs, unsurprisingly, were in knowledge-based services – 35 per cent of total employment across the EU15. Technology based high to medium tech manufacturing contributed just under 7 per cent of employment, with high tech manufacturing accounting for just over 1 per cent of total employment."* [p. 6]

Finally, the importance of knowledge-intensive enterprises can not solely be measured by facts and figures of knowledge work and knowledge-intensive industries alone. The value added and stream of innovations coming from knowledge-intensive enterprises has a deep impact on practically all other sectors of the economy. In other words *"it is the high-tech products and services that are helping to transform the rest of the economy."* [NEI, 2001] From the perspective of an ICT entrepreneur [3]: *"every time I'm … amazed how many growing tech businesses there are. Clearly, the big guys matter most, but under the radar there is loads of innovation and hard-work coming through. People talk about consolidation in the industry, as if it will lead to far fewer players quite quickly. There certainly will be acquisitions galore, but my feeling is that there will equally be an inexhaustible supply of new innovators."* In summary we can conclude that intangible assets, knowledge work and knowledge-intensive enterprises all are the main engines behind the macro-economic development towards a knowledge economy. This research focuses on enterprises active in knowledge-intensive industries and intends to contribute a deeper understanding on how these enterprises can sustain their competitive edge.

In terms of scientific relevance, this study follows in the footsteps of a longer tradition of exploring typologies of strategies and strategy processes. Typologies are generally considered to be extremely valuable in contributing clarification and understanding to the overall scientific progress [Feurer and Chaharbaghi, 1997]. In contrast to analysing research, the aim of research on typologies is to synthesise and form generalisations: *"to be sure, analysis and synthesis are both necessary phases of scientific activity. Analysis defines the components or attributes of a phenomenon and measures them; synthesis combines these into integrated images, conceptions or configurations, identifying patterns and forming generalizations".* [Quinn et al., 1993] Some of the most well-known conceptual configurations on strategy and organisation are Burns & Stalker's modes of organising (organic and mechanistic), Ansoff's planning modes (systematic, ad hoc, reactive and organic), Miles & Snow's strategy types (prospectors, analysers, defenders and reactors), Bourgeois & Brodwin's strategy implementation schemes (commander, change, cultural, collaborative and crescive), Porter's generic strategies (cost leadership, differentiation and focus), Treacy & Wiersema's generic strategies (customer intimacy, operational excellence and product leadership) and Mintzberg's organisational designs (simple structure, machine bureaucracy, professional bureaucracy, divisionalised form and adhocracy).

This research builds on the foundations of these and other typologies, not only in terms of their content but even more so in terms of an approach to research, i.e. a methodology for conducting research. In terms of their content, most existing typologies only provide limited help in answering the specific research question about corporate strategy systems in knowledge-intensive enterprises. Some of the existing typologies just allow for one or few options for knowledge-intensive enterprises, like for example in Mintzberg (adhocracy), Burns & Stalker (organic) or D'Aveni (advanced and fluid spheres). Other existing typologies address just few issues of the total complexity of corporate strategy systems, like for example in the study of Bourgeois & Brodwin that deals with strategy implementation, or the study of Ansoff that deals with a characterisation of the decision-making process.

In other words, none of the existing typologies specifically provide a deep enough insight into corporate strategy systems in knowledge-intensive enterprises. This seems only natural because the assumption behind the search for configurations and their relevance stems from

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[3] Ben Heald, Sift News Update, 31.10.2003

the fact that the shape of a strategy or a corporate strategy system is a function of the context (as determined by the various properties of the external and internal environment of an enterprise). And because the broader context changes towards a knowledge economy, the typical patterns of corporate strategy system properties will also change.

1.5   Outline of Thesis

This chapter has introduced the scope of the research, the research question, the research roadmap and the research relevance. In this last section the structure of the research report will be briefly described. The structure of this thesis is set in accordance with the earlier (see paragraph 1.3) described research roadmap.

The second chapter *'State of the art'* will define and characterise knowledge-intensive enterprises based on a literature study and expert interviews. Moreover, the chapter will characterise and define corporate strategy systems. The edges of current scientific knowledge in light of answering the research question will be mapped.

The third chapter *'Towards a theory of configurations'* contains an outline of how a theory of configurations of corporate strategy systems in knowledge-intensive enterprises should look like. This will be done through a set of orientation points that are grounded in current theory. Also, the chapter will make the starting configuration assumption explicit.

The fourth chapter *'Research methodology'* will describe the research methodology and instruments that are used in this explorative research in more detail. It will provide a link with the role of scientific enquiry according to the configuration school of strategy research and specifies the applied research strategy in light of the research questions and the current state of the art. Moreover, the chapter will describe the way in which the empirical data is collected, analysed and used.

The fifth chapter *'Case studies'* will describe the twelve case studies that are conducted in order to explore the functions, processes and distinctive properties of corporate strategy system and context. The chapter describes two case studies (CreaStudio and InnoService) of the professional services industry, five case studies from the ICT industry (AdaptIT.com, SolveTix, VERYSoft, Linux and TelEquip) and five cases from the automotive industry (MachOne, CoolSystem, InnoMobile, DriveSupply, GlobalCar).

The sixth chapter *'Cross case analysis: functions, processes and properties'* will describe the first of two phases of the cross case analysis that results in properties of the context of the knowledge-intensive enterprise. Moreover, it will describe the functions, processes and properties of corporate strategy systems. Throughout the chapter the main pieces of empirical analysis that grounds the functions, processes and properties will be integrated.

The chapter seven *'In search of configurations: a synthesis'* will present the results of the second phase of the cross case analysis and formulates the hypothesis of 'configurations of corporate strategy systems in knowledge-intensive enterprises', incl. a set of propositions.

The final chapter eight *'Discussions and conclusion'* will reflect and interpret the insights from the empirical investigations. It will formulate limitations of the research and implications for practising managers and future research.

To conclude this chapter, we have now introduced and defined the guiding research questions of this study. This study is an explorative research that aims to provide insight in the role of corporate strategy systems in knowledge-intensive enterprises. We can now move on to study the state of the art in order to understand what is already known, in the literature, about corporate strategy systems in knowledge-intensive enterprises.

2 State of the art

"What we learn about adaptive systems today will influence the way we manage enterprises … tomorrow."

- Stan Davis and Chris Meyer, 2003

This chapter maps the state of the art in research and reviews it in light of the research question. The first paragraph defines and describes knowledge-intensive enterprises. The second paragraph defines and describes corporate strategy systems. The existing schools and debates in strategy literature are reviewed in the third paragraph. The fourth paragraph then reviews the existing theories on configurations. Although a considerable amount of literature exists on corporate strategy systems and configurations, in the specific context of knowledge-intensive enterprises there are various streams of thought and the theory is fragmented. It is argued that what is missing is a synthesising model that can integrate various streams of thought into a unified theory of configurations of corporate strategy systems specifically for the context of knowledge-intensive enterprises.

2.1 What are knowledge-intensive enterprises?

This paragraph defines knowledge-intensive enterprises and characterises them according to the main organisational system elements, i.e. people, resources, activities and value for stakeholders.

2.1.1 Definitions of knowledge-intensive enterprises

Knowledge-intensive enterprises are organisations. An organisation is defined by Ackoff [1974] as *"a purposeful system in which humans are the most important elements".* This definition highlights a number of relevant points. First of all, this definition makes clear that an organisation is primarily a group of people. Secondly, this definition is based in the longer heritage of systems thinking and thus views the organisation as a system (see also the next chapter and its discussion of the living systems lens). Thirdly, this definition draws the attention to the organisation being a community of people that chooses to work together for a shared purpose, i.e. the system is purposeful. A distinction can be made between organisations and enterprises. Organisations compose the overaching group, of which enterprises form a subset. Enterprises are those organisations that perform activities where making profit is necessary for fulfilling its purpose.

One of the definitions of a knowledge-intensive enterprise (KIE) is that it is *"an enterprise with mainly knowledge workers in the primary process or at least in the technical staff when this has a dominant influence on the functioning of the primary process"* [Weggeman, 1999]. This definition focuses the attention to two important characteristics of a KIE. First of all, in line with a purposeful systems view on organisations, it underlies the importance of people as the primary elements in the organisational system. In the case of knowledge-intensive

enterprises, these people are humans with a high degree of professional competence and/or problem-solving skills (knowledge workers) and are critical for the primary value-adding activities of the enterprise. Secondly, in so defining knowledge-intensive enterprises, talent-intensive companies as well as information-intensive and technology-intensive enterprises are included. The overall category of knowledge-intensive enterprises can be divided in three types of enterprises, as depicted in the following table.

	Talent-intensive	Information-intensive	Technology-intensive
Prime resources	• Human talent • Creativity	• Information • Intelligence	• Technology • Engineering
People profiles	• Problem solvers • Creative skills	• Analysts • Programmers	• Inventors • Engineers
Knowledge-intensive activities	• Problem solving • Learning • Knowledge sharing	• Data gathering and information analysis • Information management	• Research & Development (R&D) • Product design • Marketing & sales
Typical value proposition	• Customised, professional services	• Services, information products	• Innovation, engineered products
Stakeholder orientation	• Individual customers	• Customers / Groups of customers	• Markets / Market segments
Examples of businesses	Consultants; Design studios; Advertisement agencies; …	Software; Media; Market research; IT consultants; Internet; …	Automotive; Pharma; Aerospace; Biotech; Electronics; …

Table 2-1: Knowledge-intensive enterprises

As studied for example by Alvesson [1995] in talent-intensive organisations *"individuals are the primary bearers of knowledge, even if this knowledge may be partially institutionalised and localised at the organisational level in the form of collective frames of reference (cultures), systematised methods of work, manuals, etc.".* In talent-intensive companies, knowledge takes the role of raw material, production factor and product. The typical profile of its knowledge workers is that of problem solvers with strong creative skills. In technology-intensive or high-tech companies, according to for example Bonora and Revang [1993], *"knowledge and innovation are embodied in products and technology which transmit and incorporate the knowledge in question."* The typical profile of its knowledge workers is that of inventors and engineers. A third group of enterprises can be identified as information-intensive enterprises, where information and the processing of information are dominant features. Information-intensive enterprises can be built on manufacturing (e.g. software production companies) and/or service capabilities (e.g. internet service providers). The typical profile of its knowledge workers is that of analysts and programmers.

The aspect that makes talent-, information- and technology-intensive enterprises qualify as knowledge-intensive, is that in all three cases personnel with a high degree of knowledge are of central importance. This definition of three types of knowledge-intensive enterprises will be used to guide the selection of case studies for this research. From this point on, when a reference is made to 'knowledge-intensive enterprises', these three categories of talent-intensive service providers, information-intensive companies and technology-intensive manufacturers are included.

2.1.2   Characteristics of knowledge-intensive enterprises

In the literature a number of characteristics, which typify knowledge-intensive enterprises, can be found. These characteristics are reviewed in this section according to the elementary parts of an organisational system. On a most basic notion, an organisation is first and foremost a group of *people*. An organisation is a 'community' of people [de Geus, 1997]. People perform *activities*. People have chosen to perform these activities collaboratively in order to achieve a common *purpose*. Through these activities, *value* is generated for *stakeholder(s)* of these activities. In order to perform such purposeful activities, people will need different *resources*.

This holds true not only for organisations as a whole, but also for its subsystems, like for example teams, departments or strategic business units, as well as for the larger ecosystem around the enterprise, like for example its network of suppliers, partners and customers.

In more detail, organisations can aim for a diversity of purpose. If the purpose infers making profit, the organisation is called an enterprise. Some would say that making profit is the sole purpose of an enterprise; others would take a broader view. For now, it is important to see that what is referred to as the corporate (or the collaborative) purpose is not one static entity. It actually is an amalgam of the purposes of its subsystems, sub-subsystems and finally its individuals. In this sense it certainly can be seen as an emergent and evolving property of the enterprise. A strong sense of collaborative purpose, within the people, their cultures, and the collective culture of an organisation is a strong prerequisite for corporate effectiveness [see e.g. Odomirok, 2001]. The purpose of the enterprise must also have relevance to some outside of the enterprise systems. In other words, what enterprises do must be perceived as valuable for their customers and other stakeholders, and purpose is continuously pursued and aligned in line with them, either consciously or unconsciously.

Value is created through the activities the enterprise performs, or actually through the outcomes of those activities. Although the created value can be either tangible or intangible in nature, the primary outcome of the corporate activities is its products and services. Products and services (also referred to as the corporate 'value proposition') are the primary bearer of customer value. In order to perform such value-adding activities, people make use of resources. One could say that the system of activities is a process of transforming resources into valuable products or services [Schieman, Huijgen and Gosselink, 1989]. Resources can also be either tangible or intangible in nature. An enterprise requires for example financial and material resources to perform activities as well as competencies, skills, expertise, experience, and creativity.

Resources

According to Alvesson [1995], in knowledge-intensive enterprises material or physical assets are not a central factor of the business. Especially talent-intensive KIE, are typically less capital intensive than the firms in the manufacturing industries and more learning-intensive than companies in other service industries. The critical resources of KIE are found in the domain of intellectual capital, for example in the minds of employees and in networks, customer relationships, manuals and systems for supplying services. The critical capabilities of a KIE accordingly relate to issues such as the ability to innovate (create new knowledge), customer interaction, design, branding and technical competence. In this sense the quality of the prime resources of a KIE are very much intrinsic to the qualities and skills of the knowledge workers, being for example consultants, R&D staff, designers and strategists.

One could say that individuals are the primary agents of knowledge creation. This makes that, as Weggeman [1999] points out, a KIE is heavily dependent on the loyalty of key personnel. As the most critical resources of a KIE are mobile and not 'owned' by the organisation (at least not in the sense like an enterprise can own a machine) the key personnel might leave the company at anytime.

People

In organisations where people are the most important assets of the organisation and where the majority of people is highly educated and creative, Weggeman [1999] and Warschat [2002] stress the importance of creativity and innovation for overall performance of the enterprise. In a dynamic business context, with mostly different and evolving customer preferences, there typically is a high demand of problem solving and non-standardised production. Therefore, people have to rely heavily on their creativity and the KIE typically adheres to progress and innovation. Creativity is on the hand a necessity as required by the entrepreneurial context, but on the other hand also the interest of the professional and the enterprise. Alvesson [1995], in this regard underlines that as people are the primary bearers of knowledge and the creators of new knowledge, innovations and technologies, KIE are less dependent on capital or interchangeable labour.

According to Alvesson [1995], the key people in a KIE possess high educational levels and a high degree of professionalisation. The employees are skilled, very highly educated and have a key influence on the primary value adding activities of the KIE. The people possessing this knowledge are called professionals, "gold-collar workers" or simply "experts" or "specialists" and they often make up a considerable part of all employees. Professionals typically value a high degree of independence in performing their profession, which requires a distinctive leadership and management style. Moreover, a culture of openness and inquisitiveness that encourages innovation and life-long learning, on or off the job, stimulates productivity.

Activities

In line with the definition, Alvesson [1995] sees a KIE with an emphasis on knowledge-intensive operations. Such emphasis on knowledge-intensive operations is opposed to more traditional manufacturing companies where labour-intensive or capital-intensive operations are emphasised. In a KIE, the primary activity systems of the production of goods or services typically involve a significant degree of complex non-standardised problem-solving and information processing. This implies according to Weggeman [1999], that the core activities can not be automated. Especially in talent-intensive firms, there is heavy use of systematic processes and frameworks and reliance on the power of visualization.

Next to non-standardised and non-automated nature of the production process, the KIE is highly dependent on *teamwork*, most often multidisciplinary teamwork. A KIE stimulates and demonstrates good teamwork, with team members drawn from many disciplines. This is necessary in order to be able to solve complex problems. Smaller working teams become basic units of economic activity, which certainly requires high adaptability and mobility on both the sides of the employee and the enterprise. Necessarily organisational boundaries are open, because of the movement of staff across and between organisational boundaries. This makes informal affiliations and alliances crucial (outside and inside the company). Also communication both internally and externally are main ingredients of activities.

Value

According to Lev [Economist, 2006], the balance sheet value of a KIE differs strongly from real organisational or customer value. This is because even though intellectual capital is the most important asset class, it is to the largest part not mentioned on the balance sheet. Sveiby [2000] argues that the capital and investment of the knowledge company does not show up in the balance sheet because we do not know how to account for it. A 'true' balance sheet of a KIE, according to Sveiby would include such issues as the investments and value of education, recruitment, research and development. Still KIE have to *"bet on knowledge"* even when the cost benefits can not easily be measured. Concerning corporate performance [Weggeman, 1999], there is a tendency to measure success not solely by financial criteria, but also include non-financial, intangible criteria.

The value propositions, embodied in products and services, have a relatively short life cycle. However, the underlying core competencies require years to develop and last much longer than the individual value offerings. Growth therefore can be based on replication of core competencies into different value offerings, as it is not always possible to increase scales of individual products or services.

Stakeholders

Especially for the category of talent-intensive KIE the customers are the primary stakeholders of the performed activities and are often treated individually. Customers are treated individually and 'products' are adapted to them, rather than vice versa. According to Sveiby [2001], the dominant business logic of the KIE in relation to its stakeholders is in short: attract the personnel; attract the customers; match the capacity and the chemistry of the personnel and the customer. Connections and collaboration, and the consequent focus on stakeholder relations, are an important source for adding value and corporate performance.

In relation to competitors, according to Weggeman [1999], a KIE can not simply choose to be either more cost effective or clearly differentiated. In most cases, competitive advantage of a KIE lies in finding an appropriate combination between both differentiation and cost-effectiveness. According to Encaoua [2002], (technology-intensive) KIE engage not only in competition in the market, but also in competition for the market. Competition in innovative industries is best pictured as a sequence of races to develop new technologies. Technological opportunity and winner-take-all outcomes suggest that, the form of competition that matters most from a welfare point of view in knowledge-intensive industries, is not the one that takes place in a product market, as is the case for mature industries. It is competition for the product market, i.e. a permanent race to be the first to bring a new product or a new technology to the market. In contrast to mature industries in which new participants gradually acquire market share, successful entry in innovative industries often results in a rapid replacement of the dominant incumbent. Moreover, Encaoua [2002] stresses that in numerous knowledge-intensive industries competition is affected by network and positive feedback effects. Network effects refer to the increase in value that each user attributes to a product when the number of other users increases. There is positive feedback when goods are complementary and the increased use of one good makes the other goods more valuable to users. Both network and positive feedback effects are a cause of inter-temporal increasing returns to scale.

In summary, we have identified some characteristics out of literature that clearly demonstrate some of the defining characteristics of KIE. Knowledge-intensive enterprises are defined as purposeful systems with mainly knowledge workers in the primary process or at least in the technical staff when this has a dominant influence on the functioning of the primary process. Knowledge-intensive enterprises have been divided in three categories. Although enterprises in these categories share a considerable amount of common features, among knowledge-intensive enterprises there is still a wide diversity of organisational systems, ranging from dot-com internet companies to large software international conglomerates, from old automotive companies to young consultant start ups, and from global telecom powerhouses, to local service niche players. Such differences can lie for example in differences of industry and sector, differences in activity systems, differences in the maturity of the enterprise and industry, differences in growth rates, differences in size, differences in life cycle phase of its value offerings, among many others. This diversity in contexts of knowledge-intensive enterprises will be investigated in much more detail through the case studies (see chapter 5).

2.2   What are corporate strategy systems?

This paragraph defines corporate strategy systems and characterises them according to some basic notions, such as: emergent and deliberate strategy; functional, business and corporate strategies; content, process and context of strategy.

2.2.1   Definitions of corporate strategy systems

In the academic literature, there is a broad spectrum of opinions on what a strategy is and what its meaning is for an enterprise. The broadnes of the spectrum is exemplified by the following illustration.

What is a Strategy?

There are many different explanations on what a 'strategy' is, like for example strategy is considered to be:

- a bizarre game (Stacey, 1993);
- a plan, a master plan, a pattern, a position, a ploy, a perspective (Mintzberg, 1994; Wheelen and Hunger, 1992);
- an integrative blueprint (Hax, 1990);
- a way of thinking or state of mind (Dixit and Nalebuff, 1991; Ohmae, 1982);
- innovation (Baden-Fuller and Pitt, 1996);
- a black art (Hax, 1990);
- language (Goddard and Houlder, 1995); and
- a learning process (Senge, 1990).

Moreover, strategies are can also be: generic (Porter, 1980); deliberate or non-deliberate / emergent (Mintzberg, 1994); rational or incremental (Johnson, 1988); prescriptive, descriptive, or configurational (Mintzberg and Ansoff, 1994); and implicit or explicit. (Mintzberg and Ansoff, 1994)

Source: 'Strategy: the missing link between continuous revolution and constant evolution' - Kazem Chaharbaghi and Robert Willis, 1998

Illustration 1: What is a strategy?

In literature, the following main concepts of strategy are present:

- A strategy is the direction and scope of an enterprise over the long term: *"It ideally matches its resources to its changing environment, and in particular its markets, customers or clients so as to meet stakeholder expectations."* [Johnson and Scholes, 1993]
- A strategy is a means to an end [Thompson, 2001]: *"All organizations, large and small, profit-seeking and not-for-profit, private and public sector, have a purpose, which may or may not be articulated in the form of a mission statement. Strategies relate to the pursuit of this purpose."*
- A strategy is the match an organisation makes between its internal resources and skills and the opportunities and risks created by its external environment. [Grant, 1991]
- A strategy is a pattern of decisions. [Mintzberg, 1979]
- A strategy is a course of action.

According to Mintzberg, strategy is a pattern in a stream of decisions. This pattern of decisions can be either intended or not. This gives rise to a fundemantal distinction between deliberate strategy and emergent strategy. As depicted below, deliberate strategies are patterns of decisions that are intended before they are realised. Emergent strategies are patterns of decisions that are realised despite or in absence of intentions. According to Mintzberg [1979 p. 582] *"emergent strategies are rather common in organizations, or, more to the point, almost all strategies seem to be in some part at least emergent."*
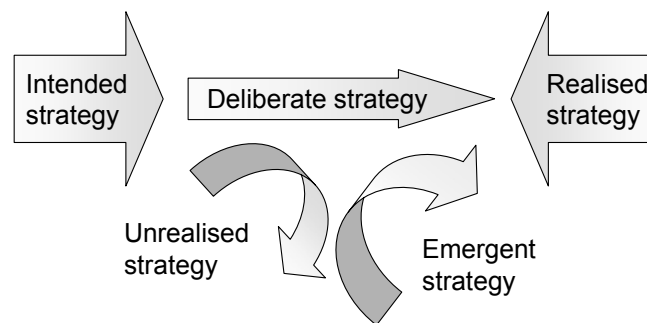
Figure 2-1: Deliberate and emergent strategy [Mintzberg, 1979]

Based on this fundamental distinction, a strategy will be defined here as follows:

A strategy is a deliberate plan or non-deliberate pattern of decisions to reach a certain purpose.

This definition covers both intended (strategy as 'plan') and realised (strategy as 'pattern') strategies. Moreover, it integrates the notion that *strategies are means to an end.* The pattern of decisions is the 'means' and the 'end' is determined by the purpose of the knowledge-intensive enterprise. The strategy definition is based directly on the definition of the knowledge-intensive enterprises as a purposeful system. Strategy is the overall course of action for the knowledge-intensive enterprise. This course might or might not be intended, but either way it is a means to fulfill the enterprise' purpose.

Not only is there a diversity of explanations of what a strategy is, there is also a wide variety of explanations of what a strategy is about. Some examples can be found in the following illustration.

> **What is Strategy about?**
>
> There are also many different opinions on what a 'strategy' is about, like for example strategy is considered to be about: *standardisation* (Douglas and Wind, 1987); *differentiation and cost leadership* (Porter, 1985); *sticking to the knitting* (Peters and Waterman, 1982); *fit and scope* (Johnson and Scholes, 1997); *stretch and leverage* (Hamel and Prahalad, 1994); *differentiating managerial tasks and asserting vital continuity* (Hax, 1990); *exploiting leverage* (Lele, 1992); *survival* (Booth, 1993); *winning* (Ellis and Williams, 1995); *global co-ordination* (Prahalad and Doz, 1986); *dependence, independence and interdependence* (Bartlett and Ghoshal, 1987); *market coverage* (Daems, 1990); *intent* (Hamel and Prahalad, 1989); *developing core competencies* (Prahalad and Hamel, 1990); *anticipating change* (Peters and Waterman, 1982); *vision* (Mintzberg, 1995); *responding to external opportunities and threats, establishing purpose and the economic and non-economic contribution made to stakeholders* (Hax, 1990); *proconfiguring thinking* (Pascale, 1984); *developing distinctive capabilities that add value* (Kay, 1994); *parenting advantage and adding value* (Goold and Campbell, 1991); *logical incrementalism* (Quinn, 1978); *coping with competition* (Porter, 1979); *implementation* (Hrebiniak and Joyce, 1984); *time-based competitive advantage* (Stalk, 1988); *capabilities-based competition* (Stalk et al., 1992); *outpacing* (Gilbert and Strebel, 1989); *portfolio planning* (Haspeslagh, 1982*); portfolio management, restructuring, transferring skills, and sharing activities* (Porter, 1987); *structure* (Chandler, 1962); *co-operation* (Contractor and Lorange, 1988); *alliances* (Reve, 1990); *collaboration* (Hamel et al., 1989); *confrontation* (Cooper, 1995); *network positions* (Johanson and Mattsson, 1992); *bringing order from chaos* (Stacey, 1993); *choosing good firms* (Baden-Fuller and Stopford, 1992); and *choosing good industries* (Porter, 1980; 1990).
>
> **Source**: 'Strategy: the missing link between continuous revolution and constant evolution' - Chaharbaghi & Willis, 1998

Illustration 2: What is strategy about?

On a basic level a distinction is made between *functional, business and corporate strategies* [De Wit & Meyer, 1998]. Functional strategies relate to the course of action to fulfil the purpose of a subset of activities, or traditionally a 'functional department' within an enterprise. Functional strategies are therefore seen to be *"the sources of competitive advantage in the activities and functions carried out by the business."* [Thompson, 2001] Business strategies relate to the course of action to fulfil the purpose of one line of business the enterprise is involved in, or traditionally in one 'strategic business unit'. Hence, *"business strategy is the determination of how a company will compete in a given business and position itself among its competitors."* [Andrews, 1987] Or in another definition: *"business strategy defines the choice of product or service and market of individual businesses within the firm … is the determination of how a company will compete in a given business and position itself among its competitors."* [Andrews, 1987] According to de Wit & Meyer [1999], business strategy determines how a firm should be related to its environment to achieve success. In other words, how can the current and potential strengths and weaknesses of the business be aligned with the current, and potential, opportunities and threats in the environment in such a way that the firm will be able to achieve its purpose.

In view of the literature, *corporate strategy* is thought to include a number of key areas of enterprise decision making:

- *Orientation*: corporate strategy determines the long term strategic direction and orientation of the enterprise [Wilson, 1992; Thompson, 2001];
- *Resource base*: corporate strategy determines the set of resources and their development path [Itami, 1987; Prahalad & Hamel, 1990; Barney, 1991];
- *Composition*: corporate strategy composes the businesses or main areas of activities [Andrews, 1987; De Wit & Meyer, 1998];

- *Scope and Scale*: corporate strategy determines the cooperation between and the control of its businesses or main areas of activities [Andrews, 1987; De Wit & Meyer, 1998];
- *Strategic Advantage*: corporate strategy determines the way the enterprise intends to be different than its competitors and create value for its stakeholders [Porter, 1980; D'Aveni, 2001].
- *Strategic change*: corporate strategy determines how the enterprise develops, evolves and changes over time [Stacey, 1995].

Considering these different notions and the previous definition of strategy (deliberate plan and emergent pattern), a corporate strategy is defined as *strategy that determines the orientation, resource base, composition, scale and scope, strategic advantage and change of the enterprise*. All of these areas of decision making are related to the development of the enterprise over time, i.e. corporate development. Therefore, corporate strategy is also regarded as *a strategy that determines corporate development*.

Corporate strategy system and the content, process and context of strategy

In the strategy literature another fundamental distinction is made between the three dimensions: the content, the process and the context of (corporate) strategy [De Wit and Meyer, 1999]. The *content of strategy* relates to the content of the decisions made on a corporate strategic level, e.g. the decision to serve stakeholders differently, the decision to move out of a certain business, the decision to merge with another company, the decision to set up a strategic alliance, the decision to become a services company, etc. etc. The *process of strategy* relates to how the strategies come about, i.e. the ways in which decisions are made. Typically, strategy processes start with a strategic analysis (of for example the internal and external environment), the formulation of a strategy and the implementation of a strategy. The process dimension of strategy is referred to, in the literature, as 'strategy formation', 'strategy formulation', or 'strategic planning'. The *context of the strategy process* and content is understood as the direct corporate context (internal environment) of strategy formation and the broader context (external environment).

In the previous paragraph, the enterprise was defined as a purposeful system. As will be argued in more detail in the following chapter (see paragraph 3.2), the KIE is regarded as a living system. This research bases on the foundations of systems thinking. The object of study is the corporate strategy system. The *corporate strategy system*, by using a nautical metaphor, is the set of deliberate and non-deliberate processes that guide an organisation in determining its course, sail out and steer its course and track and possibly correct its course. Like the way a ship, when at sea, might for that cause use e.g. a sextant, an organisation relies on its corporate strategy system. In line with the definition of strategy and corporate strategy, the corporate strategy system is defined as follows:

The corporate strategy system is the corporate sub system that realises corporate strategy, i.e. the corporate sub system that governs corporate development.

The corporate strategy system is a corporate sub system that fulfils one of the main functions of an enterprise, as it determines the overall course of corporate action. Although it might take different forms or shapes, for a corporate strategy system to function, resources are made available (e.g. information and human resources), people are involved (e.g. CEO, management team, planning departments, line managers and employees), and activities are conducted (e.g. analysis, communication and decision making). The corporate strategy system is the system that 'realises' corporate strategy. Note that in this definition the verb

'realises' points both to the processes of strategy formation (e.g. analysis and decision making) and strategy realisation (e.g. communication and implementation). The CSS, in line with the original definition of strategy, does include not only people and activities related to intended strategy, but also emergent and eventually realised strategy.

The corporate strategy system is analysed in its context. In the configuration school of strategy research, context plays a crucial role. A main assumption underlying the work in the configuration school is that the effectiveness of a strategy system is determined not by its own configuration alone, but more so by the configuration within the context [Mintzberg et al., 1998]. Regarding the distinction between process and content, actually both are integrated in the concept of the corporate strategy system. In order to function processes take place within the system. As part of these processes, decisions on the content of strategy are made. The content dimension of strategy is represented in this research by what is called 'functions' of the corporate strategy system. Seeing the CSS in its context, functions are the sets of main tasks that the CSS fulfils as a subsystem of the knowledge-intensive enterprise. Following the logic of 'form follows function', the form of the corporate strategy system will be argued to depend on the function it fulfils within its context (i.e. the knowledge-intensive enterprise). But also the content of the strategic decision making is determined by the function of the corporate strategy system. For example if the function of a CSS is to determine a competitive position, the content of strategic decisions will also focus on competition and determining a position. But, the concept of corporate strategy system is more holistic than the sole distinction between content and process. The corporate strategy system requires resources and people, activities (processes) are taking place and decisions (content) are taken on various areas of decision making, all determined by the function that the CSS fulfils in light of the corporate development of the KIE.

In summary, the object of study is the corporate strategy system. We have defined the CSS as the corporate subsystem that governs corporate development. It is an integrative concept that combines the process and content dimension.

Corporate strategy system and the KIE units of activity

Corporate strategy is sometimes also referred to as 'holding strategy' or as 'multibusiness strategy'. De Wit and Meyer [1998] for example describe corporate strategy as dealing with the composition of the portfolio of strategic business units. In this research, the concept of corporate strategy is interpreted to include not only the strategy for the portfolio of business units, but more generally for any type of primary unit of activity. In this way, the concept of corporate strategy does more just to the fact that not all knowledge-intensive enterprises have divided their value-adding activities into business units.
The primary units of activity (UOA) of a KIE can be among others: strategic business units (SBU) or strategic fields of business; subsidiaries, e.g. daughter companies or country units; projects; or functional units/departments.
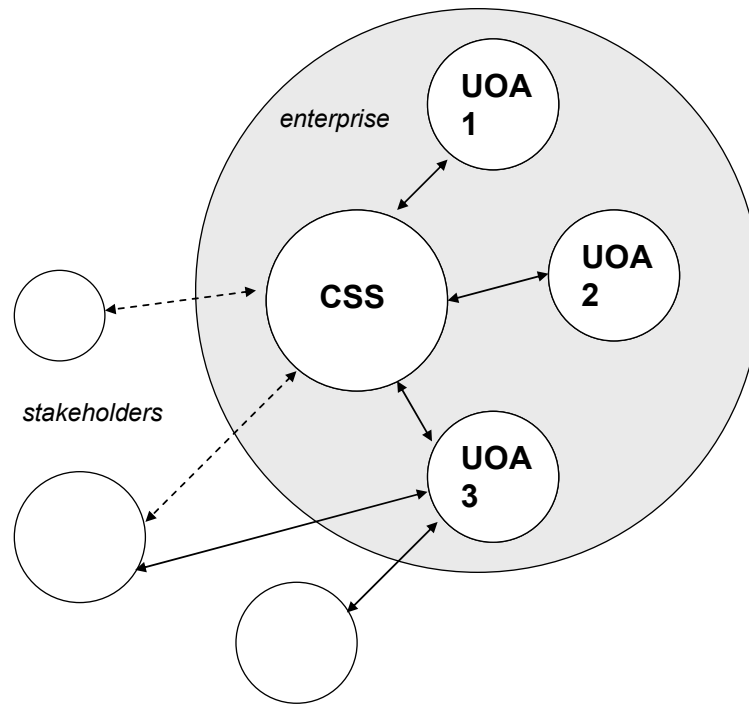
Figure 2-2: Corporate strategy system and units of activity

As depicted in the figure above, the relationship between the CSS and the primary units of activity remains a crucial issue in understanding the dynamics of how strategies become formed and realised. It is within this dynamics that the emergent and deliberate pattern of decisions gets its shape.

2.3   Strategy schools and debates

This paragraph gives an overview of the current state of the strategy literature, grouped according to a number of schools of thought and a number of debates.

2.3.1   Strategy schools of thought

"Strategy formation is judgmental designing, intuitive visioning, and emergent learning; it is about transformation as well as perpetuation; it has to include analyzing before and programming after as well as negotiating during…"

– Henry Mintzberg, 1998

Throughout time, a large amount of thinkers have addressed the issues related to (corporate) strategy systems from many different angles. To a large extent the differences in perspective can be understood from the wide range of base disciplines on which the strategy theories are based, such as economy, biology, anthropology, philosophy and politicology. Mintzberg et al. [1998] emphasise this broad diversity of perspectives in current strategic thinking and have identified *nine main distinct schools* in strategy theory. Three of these schools – Design, Planning and Positioning School - are said to be prescriptive in nature and the other six schools – Entrepreneurial, Cognitive, Learning, Political, Cultural and Environmental School - are descriptive in nature.
We will start by reviewing the three prescriptive strategy schools.

	Design	*Planning*	*Positioning*
Key author/s)	Andrews, 1965	Ansoff, 1965	Porter, 1980
Base discipline	none	system theory, cybernetics	economics
Vocabulary	SWOT-model, "fit"	formalizing, programming, budgeting	analysing, generic, strategy
Central actor	president-director	planners	analysts
Environment	opportunities and threats	stable and controlled	analysable in economic variables
Strategy [4]	explicit perspective	explicit plan	explicit generic positions

Table 2-2: Strategy Theory – Prescriptive Schools [Mintzberg, 1998; Elfring & Volberda, 2001]

As with any classification there is a certain danger of trying to put rich individual ideas and concepts into a limited number of 'boxes'. It may lead to oversimplification. However, this classification of strategy schools does contribute to a deeper understanding of how (corporate) strategy systems are perceived in mainstreams of thinking. With the corporate strategy system being defined as the system that realises corporate strategy, the following concise review of the nine main schools of strategy thinking provides with a rich diversity of angles on how strategies are shaped, initiated, negotiated, formulated, implemented and improved – in other words, how strategy systems function.

The Design School – Strategic Planning as Processes of Conception

According to the design school, strategy systems are understood to be deliberate in nature and strategy formation is regarded as a process of conscious thought. Responsibility for that control and consciousness must rest with the chief executive officer, who is therefore the main strategist. Moreover, the model of strategy formation should be kept as simple and informal as possible. Strategies should be one of a kind, where the best ones result from a process of individualised design. The strategy formation thus should be regarded as a true design process, which is complete when strategies appear fully formulated. Therefore strategies should be made explicit and they have to be kept simple. Finally, only after these unique, full blown, explicit, and simple strategies are fully formulated can they be implemented.

The Planning School - Strategic Planning as Formal Processes

According to the planning school, with its roots in systems thinking and cybernetics, strategy systems are understood to consist of controlled, conscious processes of formal planning, decomposed into distinct steps, each delineated by checklists and supported by techniques. Responsibility for the overall process typically rests with the chief executive in principle; however responsibility for its execution rests with staff planners in practice. In comparison with the design school, strategies that result from this process appear much more full blown and detailed. Strategies are made explicit so that they can be implemented through detailed attention to objectives, budgets, programs and operating plans of various kinds. The thinking of the planning school has led organisations, mainly in the seventies and early eighties, to build up significant staff departments of analysers and planners. This has brought with it an

---

[4] In his definition of the ‚strategy' concept, Mintzberg [e.g. Mintzberg et al., 1998] makes a distinction between: strategy as ‚plan' (a direction, a guide or course of action into the future, a path to get from here to there); strategy as ‚pattern' (consistency in behaviour over time); strategy as ‚position' (the locating of particular products in particular markets); strategy as ‚perspective' (an organisation's fundamental way of doing things); strategy as ‚ploy' (a specfic maneuver intended to outwit an opponent or competitor).

amount of disadvantages in practice, such as [Mintzberg, 1994]: staff departments taking over the process; the process being dominated by the staff; planning systems being virtually designed to produce no results; planning focussing on the more exciting game of mergers, acquisitions and divestitures at the expense of core business development; planning processes failing to develop true strategic choices; planning neglecting the accompanying organisational and cultural requirements of strategy; single-point forecasting as an inappropriate basis for planning in an area of restructuring and uncertainty.

The Positioning School - Strategic Planning as Analytical Processes

According to the positioning school, with its main roots in economics, strategy systems are understood as focussing on strategies that are generic, specifically common, identifiable, positions in the marketplace. Hence the marketplace (the context) is perceived to be economic and competitive. The dominant process is therefore one of selection of these generic positions based on analytical calculation. Analysts do play a major role in this process, feeding the result of their calculations to managers who officially control the choices. As with the design and planning school, strategies coming out of this process are first articulated and then implemented. The main difference is the strong focus on the external environment, especially market structures are believed to drive deliberate positional strategies.

Next to the prescriptive schools, Mintzberg has described a number of descriptive schools, which we will briefly review here.

	Entrepre-neurial	*Cognitive*	*Learning*	*Political*	*Cultural*	*Environ-mental*
Key author/s)	Schumpeter, 1934	Simon, 1945	Lindblom, 1959; Quinn, 1980	Allison, 1971; Perrow, 1970	Normann, 1977	Hannan & Freeman, 1977
Base discipline	none	psychology	psychology	politicology	anthropology	biology
Vocabulary	vison, leadership, innovation	bounded, rationality, map, survival	incremental "emerging"	power, coalition dominant	ideology, values	reaction, selection, retention
Central actor	leader	"think"	everybody who learns	everybody with power	collectivity	"stakeholders"
Environment	manoeuvrable	overwhelming for cognition	demanding	intractable, malleable	incidental	dominant, deterministic
Strategy	implicit perspective	mental perspective	implicit patterns	positions, plays	collective perspective	specific position

Table 2-3: Strategy Theory – descriptive Schools [Mintzberg, 1998; Elfring & Volberda, 2001]

The Entrepreneurial School - Strategic Planning as Visionary Processes

According to the entrepreneurial school, strategy systems are understood as processes existing mainly in the mind of the leader. Strategies are therefore believed to be specifically about a sense of long-term direction, a vision of the enterprise future. The processes of strategy formation are therefore semiconscious at best. They are firmly rooted in the experience and intuition of the leader, whether he or she actually conceives the strategy or adopts it from others and internalises it in his or her own behaviour. The leader promotes the vision single-mindedly, sometimes even obsessively, maintaining close personal control of

implementation processes in order to be able to reformulate specific aspects as necessary. So, entrepreneurial strategy systems tend to be both deliberate and emergent, in the sense that the overall vision and direction are deliberate in nature, whereas they are emergent on how the details unfold. The enterprise likewise typically is a simple structure responsive to the leaders' directives, generally found among start-ups, companies owned and managed by a single individual, or turnarounds in large established enterprises. Many of the procedures and power relationships are suspended to allow the visionary leader considerable latitude for manoeuvring. Entrepreneurial strategy systems are argued to tend to take the form of niche strategy, one or more patches of a market position protected from the forces of outright competition.

The Cognitive School - Strategic Planning as Mental Processes

According to the cognitive school, with its main roots in psychology, strategy systems are understood as cognitive processes that take place in the mind of the strategist. Strategies emerge as perspectives - in the form of concepts, maps, schemas, and frames - that shape how people deal with inputs from the environment. These inputs, according to the 'objective' wing of the school, flow through all sorts of distorting filters before they are decoded by the cognitive maps, or else according to the 'subjective' wing are merely interpretations of a world that exists only in terms of how it is perceived. As concepts, strategies are difficult to attain in the first place, considerably less than optimal when actually attained, and subsequently difficult to change when no longer viable. In this regard various forms of cognition have an influence on how strategy systems are said to function, like for example cognition as confusion, cognition as information processing, cognition as mapping, and cognition as concept attainment.

The Learning School - Strategic Planning as Emergent Processes

According to the learning school, also with its main roots in psychology, strategy systems are understood as processes of learning over time, in which formation and realisation activities are intertwined and indistinguishable in nature. This is due mainly to the complex and unpredictable nature of enterprises and their environments. Through the diffusion processes of knowledge bases, which are necessary for strategy systems, deliberate control is excluded. Whereas the leader must learn too, and sometimes can be the main learner, more commonly it is the collective system of the enterprise that learns. This implies that, at any point in time, there are many potential strategies in most enterprises. The learning is a process proceeding in emergent fashion, through behaviour that stimulates thinking retrospectively, so that sense can be made of action. Therefore, the role of leadership becomes not to preconceive deliberate strategies, but to manage the process of strategic learning, from which novel strategies can emerge. Accordingly, strategies appear first as patterns out of the past, only later, perhaps, as plans for the future, and ultimately, as perspectives to guide overall behaviour.

The Power School - Strategic Planning as Processes of Negotiation

According to the power school, with its roots in politicology, strategy systems are understood as being shaped by power and politics, whether as a process inside the enterprise itself or as the behaviour of the enterprise as a whole within its external environment. Strategies that may result from such processes tend to be emergent in nature, and take the form of positions

and ploys more than perspectives. On the one hand, part of the power school ('micro power') sees strategy formation as the interplay, through persuasion, bargaining, and sometimes through direct confrontation, in the form of political games, among parochial interests and shifting coalitions, with none dominant for any significant period if time. On the other hand, another part of the power school ('macro power') sees the enterprise as promoting its own welfare by controlling or cooperating with other enterprises, through the use of strategic manoeuvring as well as collective strategies in various kinds of networks and alliances.

The Cultural School - Strategic Planning as Collective Processes

According to the cultural school, with its roots in anthropology, strategy systems are understood as processes of social interaction, based on the beliefs and understandings shared by the members of an enterprise. An individual acquires these beliefs through a process of socialisation, which is largely tacit and nonverbal, although sometimes reinforced by a more informal indoctrination. The members of an enterprise can, therefore, only partially describe the beliefs that underpin their culture, while the origins and explanations may remain obscure. As a result, strategy takes the form of perspective above all, more than positions, rooted in the collective intentions (not necessarily explicated) and reflected in the patterns by which the deeply embedded resources, or capabilities, of the enterprise are protected and used for competitive advantage. Strategy is therefore best described as deliberate (even if not fully conscious). Culture and especially ideology do not encourage strategic change so much as the perpetuation of existing strategy. At best, they tend to promote shifts in position within the enterprise's overall strategic perspective.

The Environmental School – Strategic Planning as Reactive Processes

According to the last of the nine schools, the environmental school with its roots in biology, strategy systems are understood as being about responding in a natural manner to the corporate external environment. The external context presents itself to the enterprise as a set of general forces, and is therefore the central factor in the strategy formation processes. The enterprise must respond to these external forces, because otherwise it would be 'selected out'. Leadership, in this regard, becomes a passive element for the purpose of reading the environment and ensuring proper adaptation by the enterprise. In the long run, enterprises end up clustering together in distinct ecological-type niches, positions where they remain until resources become scarce or conditions too hostile.

The strategy schools of thought, the research question and the configuration school

In light of the research question, it should be noted that these schools of thought are not soley related to corporate strategy, but to strategy in general. However, a couple of interesting findings can be extracted from this overview of streams of thought.
First of all, we can see that these nine very different streams of understanding strategy systems underline that the (corporate) strategy system is a complex and multi-dimensional function within the enterprise. The function includes judgmental designing, intuitive visioning, and emergent learning; it is about transformation as well as perpetuation; it has to include analysing before and programming after as well as negotiating during [Mintzberg, 1998]. This makes clear that a single dimensional approach to studying the corporate strategy system is

not very helpful, but rather that a synthesising research should aim to bring together the various dimensions of the corporate strategy system in its context.

Secondly, this wide variety of thought also points us to a lack of a coherent body of knowledge in the field of strategy theory: *"each of the nine schools represents a specific angle or approach to strategy … Mintzberg (however), shows that each school of thought is concerned with a certain aspect of the total picture, ignoring the other aspects along the way. If the contributions, shortcomings, assumptions and context of the diverse schools of thought are made more explicit, the fragmentation within strategic management is made painfully obvious."* [Elfring and Volberda, 2001]

Such fragmentation of thought implies a huge challenge in theorising about corporate strategy systems in knowledge-intensive enterprises. There are authors who therefore argue that there is a huge potential and need for more integration and synthesis in strategic thinking. In this regard, Elfring and Volberda [2001] point towards three current streams of integrative strategy theory: the *'boundary school'*, which is mainly focussing on boundary issues of enterprises; the *'dynamic capability'* school, which understands corporate strategy systems as collective learning processes aimed at developing distinctive capabilities; and the *'configuration'* school.

The configuration school is actually the tenth strategy school that is described by Mintzberg as a synthesising school encompassing thoughts and ideas of the other nine schools: *"The premises of the configuration school encompass those of the other schools, but each in a well-defined context. It is, however, this very encompassing that distinguishes the configuration school."* [Mintzberg et al., 1998, p.302]

According to Mintzberg, the configuration school has roots in history and some of its key authors are: Chandler [1962]; McGill Group [Mintzberg, Miller, etc. late 1970s]; Miles and Snow [1978]. Some of the main vocabulary used in this school is: configuration, archetype, period, stage, lifecycle, transformation, revolution, turnaround, revitalisation. According to authors with this view, the form and shape of the strategy system depends on the time and place it is in, i.e. it depends on the specific context. The context, the enterprise and the strategy system all work together to form configuration. A strategy system, according to this view, must be fitting to the context of the enterprise and the external environment.

Research in the configuration school starts from the notion that *"effective strategic management requires both (1) a recognition that there is not "one best way" to develop strategy in every situation, and (2) an in depth understanding of the variety of forms and approaches that may be possible in different situations."* [Quinn et al., 1993] The research on strategy configurations basically implies a search for patterns of effective strategy systems in relation to specificalities of the corporate context: *"the configuration school … mainly focuses on the following research questions: In what environment are specific strategy configurations effective? What are the relevant dimensions which explain the variety of strategy configurations? How can an organization pass through a transition from the one configuration to the other?"* [Elfring and Volberda, 2001]

This research is inspired by the configuration school of strategy research. It can therefore draw on the rich amount of studies that have been conducted in this school. Some of the most relevant configuration studies will be reviewed in paragraph 2.4.

2.3.2   Persistent debates about strategy

As reflected in the strategy schools, the strategy theory contains a broad and colourful spectrum of opinions on the why, how and what of strategy formation and realisation. De Wit and Meyer [1998] have condensed this broad variety of opinions in a number of debates on the process, content and context of strategy. For the research question, a number of these debates are considered relevant: the *context debate* (inside-out versus outside-in); the *network debate* (competition versus cooperation); the *corporate debate* (responsiveness versus synergy); and the *strategic change debate* (revolution versus evolution). These debates are shortly reviewed in the following sections.

Context debate - the paradox of outside-in versus inside-out

In the *context-based view of the firm* [e.g. Porter, 1985], the strategy system is considered to relate to the process of establishing the ways by which the competitive position of an organisation can be defended or enlarged by either developing new products or moving into other markets, or a combination of both (new products, new markets). This externally oriented view or outside-in perspective thus takes the context as the starting point when determining a strategy. The context involves markets and industries, as well as the whole range of corporate stakeholders. Therefore, context is perceived as something that is primarily uncontrollable and non-influential. Enterprises should pay attention to, for example, the shifts in customer demands, challenges from the competition side, excessive pricing by the suppliers and new entries of the rival firms. Thus, strategy development is concerned with achieving an attractive competitive position. This view is therefore also referred to as the "positioning approach" (see also positioning school). Positioning, in this understanding, is not a short term issue, but is a fundamental long term facet of strategy. Moreover, the external environment is perceived to be a highly complex system with a large number of forces interacting and firms are too small and insignificant players to be able to have a great impact on them. Through selection the industry determines the survivors ('survival of the fittest') and through adaptation processes the behaviour of the remaining firms are 'optimised'. This all goes hand in hand with the principle of variation and environmental selection. In other words, in the context-based view of the firm, it is the industry which determines corporate success and not the other way around.

In the opposing *capability-based view of the firm* [e.g. Grant, 1991; Prahalad and Hamel, 1990], competitive positions are described based on the uniqueness of the set of capabilities of the enterprise. Strategy systems are perceived to mainly be about trying to establish and defend core competencies and shaping products and markets grounded on these capabilities. This view on the firm is also considered as the resource-based, capabilities-based or inside-out view on strategy. The main idea is that strategies should be built around an enterprise's strengths, difficult-to-imitate competencies or on the acquisition of exclusive assets. Of course, this view has its own advantages (capabilities difficult to imitate by competitors) and disadvantages (difficult to switch to other competencies according to market demands). Still, markets are treated as something that can be chosen, adapted or created to make best possible use of specific corporate capabilities. In this view products and services are an end result of capabilities and (boundaries of) markets are shaped around these capabilities and products. No market position will remain favourable in the long term, and the corporate strategy system in this view defines what set of (core) competencies an

enterprise should defend, establish and develop. Fundamentally, in the capability-based view of the firm, the business context is something that can be shaped by an individual enterprise. Although there are certain economic, technological, social and political factors which are difficult to shape, a significant part of environmental factors can be manipulated. The strictness of the rules (the degree of the liberty left to the strategists) and the rigidity (to what extent strategists can change the industry rules) are not as high as believed, in all it is considered that enough space of possibilities is left to shape the industry as wanted.

Network debate - the paradox of competition versus cooperation

The knowledge-intensive enterprise is not alone in its markets, but will face various groups of stakeholders in its environment. The issue of network level strategy is about whether or not to develop a network (or multi-company level) strategy: should an enterprise build long-term relationships with its suppliers or its customers, or not? Again two opposing opinions can be identified, in favour and against network level strategy. One perspective claims that inter-organisational relationships are always of a competitive nature (open warfare till friction, tension and strain). The other perspective claims that relationships between organisations should be mainly cooperative in nature, starting with occasional collaboration and ending with virtual integration. [De Wit & Meyer, 1998]

According to the *discrete organisation perspective*, it is argued that as competition is the "natural state of affairs", organisations should remain independent and compete in a hostile environment. In such an environment companies must strengthen their position by getting good price / quality business. Proponents of the discrete organisation state that coalitions are recommended when companies are not strong enough by themselves, but only as second best option after independence. Collaboration is perceived as the strategy of the weak and eventually it will end up with manoeuvring, manipulating or cheating. Collaboration has a bad effect on competition also, and the ones that will have to suffer from that are the buyers. It also is believed to inhibit the need of a company to look for continuous improvement and innovation. The competitive situation in this perspective is of an atomistic (each individual firm looks to reach its own goals) and zero sum nature (all fight to get as much as they can from the proverbial 'pie').

According to the opposing *embedded organisation perspective*, collaboration is seen as the mechanism that determines interactions between organisations. Companies must be collaborative and competitive at the same time, and the balance between the two may vary. For example a company may have a strong relation with a supplier for a certain product, while for the rest of the products the suppliers must compete strongly. Collaboration is viewed as an alternative in dealing with other organisations. Proponents of this perspective argue that companies should embed themselves in long term collaborative relationships (for example joint ventures, strategic alliances, value-adding partnerships). The enterprises are naturally regarded as networks. In such networks, companies should align their strategies in order to get a maximum of benefits. Strategies are adopted not by a top-down decision but by a mutual agreement. In this perspective collaboration is seen as a positive sum game, implying a continuous search for win-win situations.

Corporate debate - the paradox of responsiveness versus synergy

Corporate level strategy relates, among others, to the determination of composition, scale and scope of corporate activities and can be understood to deal with the identification and

realisation of synergies between different corporate activities. It involves the way in which resources are shared, or resources are leveraged between activities in different lines of business, or classically between the strategies of two or more business units (strategy alignment). In order to realise synergies between different business activities, two opposite perspectives can be identified of facing this challenge: the portfolio perspective and the core competence perspectives [De Wit & Meyer, 1998].

According to the *Portfolio Perspective*, each 'strategic business unit' (SBU) must develop a specific strategy according to their goals and be highly responsive to the competitive dynamics of their specific business. The corporate centre has the liberty to interfere: select a portfolio of business, keep tight financial control, allocate and redirect available capital. Cross-business coordination is regarded as a requirement in order to achieve success. The main goal for highly autonomous business units is leveraging financial resources. Also other kind of synergies can be pursued, but SBU do not need to be related other than in financial terms. So the strategic mission of each business unit is primarily of financial nature: grow, hold, milk or divest. Managers have to assure a balance between cash producers and potential cash users in order to achieve success.

According to the opposing *Core Competence Perspective*, it is argued that only the shared competencies are considered to be the best central core for a multi-business company. The core competencies accordingly should be used and leveraged as much as possible across all the firm's business units. All business units should contribute to the core competencies of the organisation, by being empowered with relatively small autonomy (in comparison to the portfolio perspective). In this sense, corporate units of activity (e.g. SBU), should remain close team players. The argument is that building a corporation's core competencies is the main strategic issue, whereas striving to occupy a good market position is a tactical issue.

Strategic change debate - the paradox of revolution versus evolution

The corporate strategy system governs the processes of corporate development of the KIE. Corporate development is all about change. For strategists, whether an enterprise must change is, therefore, not an issue of discussion. The main discussion is about how to know where, how and in what direction enterprises must change. Two opposite perceptions on strategic change are the perspective of evolutionary change (piecemeal and continuous) and perspective of revolutionary change (dramatic and discontinuous). [De Wit & Meyer, 1998]

Along the lines of the *discontinuous change perspective*, it is argued that organisational change will never occur gradually, because change is not steady and constant but abrupt and dramatic. Proponents argue that people and organisations are characterised by inertia: the unwillingness to change due to uncertainty and ambiguity. Such inertia is said to be overcome only by an "organisation-wide switch-over to a new system". In this view, organisational change is not gradual but episodic, and it is often referred to as a 'punctuated equilibrium view'. Therefore discontinuous change can be either proactive (rapid implementation is most important for the organisational capabilities, for promoting innovation and creating new products and processes) or reactive (the reaction to the organisational crisis).

According to the opposing *Continuous Change Perspective*, it is argued that strategic change should have a more long term orientation, constantly maintained over a longer period of time, and that the only way this is naturally possible is through continuous change. In this

perspective, discontinuous change is perceived as only looking for short term results and may cause disruption and dysfunctional crisis. In order to implement continuous change, an enterprise has to fulfil three main requirements: its employees should be committed to continuously improve, continuously learn and continuously adapt. While continuous change is believed to involve all the personnel within an organisation, discontinuous change is said to be mainly initiated by top management and carried out by a handful of specialists.

The strategy debates in light of the research question

In light of the research question, the different debates represent valuable insights in a variety of opinions on the nature of the corporate strategy system. The debates about the context, network, corporate and strategic change all address relevant aspects for the corporate strategy system. We can learn from both perspectives in these debates. However, the debates display again the fragmentation and diversity of opinion in the current strategy literature.

The different perspectives in each debate can be understood as the theoretical poles. The perspectives offer different and sometimes opposing views on relevant aspects related to the context and corporate strategy systems. One of the principles of the synthesising configuration school and of this research is that the effectiveness of a corporate strategy system very much bases on the ability to achieve a consistent fit between the knowledge-intensive enterprise, its activities, its network and its purpose. This ability is to a large extent determined by the capacity to contextually strike a fitting balance between different and sometimes opposing forces. The synthesis we will aim for in this thesis is that depending on the specific context of the corporate strategy system, a different perspective will be more appropriate or more emphasised than another.

2.4   Studies on corporate strategic planning and configurations

The current state of the strategy literature has been made transparent through the schools of strategy thought and the strategy debates, as described in the previous paragraph. We can build on these lessons learned and zoom in on two areas of particular interest for the research question. The first section will review the literature on corporate strategic planning. The second section will review some of the previous studies that have been conducted in the configuration school.

2.4.1   Studies on corporate strategic planning

Strategy formation and realisation consist of deliberate and emergent elements. However, most of the studies that are conducted on the corporate strategy system focus on the more formal and intended aspects of strategy, i.e. the processes followed to determine the intended plan. The processes related to determining the intended plan can also be reffered to as 'corporate strategic planning'. A number of relevant studies that have been conducted on corporate strategic planning are reviewed in this section.

In a study of planning practices among technology-intensive enterprises, APQC [1997] has found that *"effective planning groups exhibit and practice continuous planning. Apart from the annual rhythm of strategic (and business) planning, companies respond to the unpredictable timing and nature of strategic issues. Senior management commits time and is ready to adapt."* Corporate strategy relates to the future of the enterprise, some would even say it is

primarily about shaping the future of the corporation: *"our strategies are built on expectations and expectations are based on beliefs about the future"* [Chaharbaghi and Ederer, 2003]. In another study on practices of corporate planning, referring to the strategic dialogue between the corporate centre and business units, Kaplan and Beinhocker [2003, p.73] claim that *"the conversation should focus on long-term trends, opportunities, challenges and decisions. In business where decisions have a long life-time and are difficult to reverse such as aerospace or telecommunications, 'long term' might mean five to 10 years. In those where commitments have a shorter life, such as software or consumer goods, it might mean two to five years."* This shows us that there are differences between enterprises regarding the time horizon that is taken into account in their strategy. In other words, the meaning of short-, medium- or longer-term orientations in a corporate strategy system can be determined differently depending on the context.

In the same best practice study of APQC the role of (top) management is underlined and shown to be a critical success factor for strategic planning. The study points to the following beneficial issues: management take extensive ownership of and investment in the process; the strategic planning serves as the backbone of the management system; the organisation structure is consistent with strategic posture; and the planning staff facilitates the involvement of top management. In another study on technology-intensive enterprises, especially smaller ones, Berry [1998] also underlines the vital importance of the entrepreneur in determining the strategic orientation and planning practices of a small company. According to Berry, the type of planning within the firm will mainly depend on the entrepreneur's previous experience and whether or not a diversified team is in place. In a context where top management are all technically qualified people, with no previous general management experience gained, usually no real planning activities are apparent. In a context where top management is dominated by technically qualified directors, but where directors may have had previous management experience prior to start-up, typically formal and financial oriented planning activities can be found. In a context where top management is predominantly technically qualified but either the founding directors had previous general management experience or the balance of skills in the management team, typically formal financial and informal strategic planners can be found. Finally, in a context with a multi-disciplinary management team with a wide range of general management experience, there would be formal strategic planning and stressing the importance of formal and explicit strategy formulation process.

There are a number of studies conducted on how to organise and systematise corporate planning processes. For example in their study, Gavetti & Rivkin [2005, p.54] point out that instead of making it an annual ritual without any impact on the organisation, strategic planning is better conceived as making critical strategic decisions: *"Strategy is about choice. The heart of a company's strategy is what it chooses to do and not to do. The quality of the thinking that goes into such choices is a key driver of the quality and success of a company's strategy. Most of the time, leaders are so immersed in the specifics of strategy – the ideas, the numbers, the plans – that they don't step back and examine how they think about strategic choices."* This shows that top management need to spend enough time and effort on corporate strategic planning. Christensen [1997, p. 141] mentions that *"strategic thinking is not a core managerial competence at most companies. A company's executives can actively cultivate a deep competence in strategic planning by engaging in such planning over and over again. It follows that management teams need to engage in strategy making themselves."*

Instead of being a fight or show between corporate centre and business units, corporate planning can also be regarded as a real strategic discussion. Kaplan & Beinhocker [2003, p. 72] emphasise that the *"key to transforming review meeting from dog and pony shows into effective vehicles for learning was to vie them not as 'reviews by the CEO' but as conversations."* Instead of an obligation or a system without creativity, strategic corporate planning is regarded more as a learning process, a process of preparing minds of managers. Kaplan & Beinhocker [2003, p. 76] make a point that *"…strategic planning … (is) one of the most important tasks for senior corporate and business-unit executives. Companies whose processes look more like tribal rituals waste valuable executive time at a minimum; more seriously, they may leave corporate leaders unprepared to respond properly when the inevitable moments of truth arise. When repositioned as a learning process, formal strategic planning can help managers make solidly grounded strategic decisions in a world of turbulence and uncertainty."*
It is suggested by Beinhocker [1999] that in order to make strategic planning more robust (to external shocks), an enterprise is wise to not develop one strategy, but rather develop a set of strategies that are pursued in parallel. Also, in order to be more effective, the different corporate strategy system processes can be conducted in parallel. In this way, strategic corporate planning directly links acting and thinking; it links strategy formation and realisation in order to impact corporate performance. Corporate strategic planning is a problem solving cycle, where creative problem solving is based on more and more (through IT systems) online & realtime facts & figures.
Strategic corporate planning in order to add any value to the enterprise, challenges the 'usual ways' of working of the organisation and impacts first of all managers and the decisions they make [Campbell, 1999] and secondly impacts corporate action. Kaplan & Beinhocker [2003, p.74] mention that *"disciplined follow ups is essential. Long term strategic goals should be tied to shorter-term budgets, financial targets, operating plans and human resource strategies."* Christensen [1997, p. 156] emphasises the link between planning and resource allocation and projects selection*: "If strategy and innovation are tightly linked through the annual aggregate-project-planning process, senior managers will develop a competence in implementing strategic change".*

These studies point out that the goal of a modern corporate strategic planning process is not to conduct rituals, keep a planning system alive or planners at work, but the criterion is rather whether all the participants came out the process better prepared for the real-time job of strategic decision making.
We can learn from these studies that the corporate strategy system, including its processes, is a dynamic concept. In strategic planning, the context of the planning system is continuously changing and the system is immune to those changes. A corporate strategy system aims to prepare all people involved for those changes and deal with them as they occur. A lesson to be learned from this is that strategy in general and the corporate strategy system in knowledge-intensive enterprise in particular are dynamic phenomena. Theories aiming to better understand these phenomena should therefore aim to accordingly integrate a dynamic view.

2.4.2   Studies on typologies and taxonomies

As mentioned earlier, this research draws from the experiences made within the configuration school of strategy research (see section 2.3.1). Therefore, before exploring the

configurations of corporate strategy systems in knowledge-intensive enterprises, we have to understand what the edges of the state of the art landscape in this area of research are. The following examples describe a number of the previous configuration studies.

Based on a small sample, cross industry study of large corporations, *Miles & Snow* [1978] have developed a taxonomy of superior business types. They have developed four types – defenders, analysers, prospectors and reactors - and they propose that three of these are superior types of businesses (defenders, analysers, prospectors), and all others perform less well. One of the main contributions of Miles and Snow's configurations in light of this research is that they show that in order to be superior, there must be a clear and direct match between the enterprise's mission & value statements, the enterprise's basic strategies (as planned), and the according functional strategies (as performed).

Grandori [1984] has constructed a typology of various decision models, with a focus on dealing with two fundamental dimensions of decision making: uncertainty and conflict of interest. Mainly on the basis of these two properties, Grandori offers a framework that enables a comparison of different organisational decision strategies. Therefore, Grandori basically differs between optimising and non-optimising strategies and argues that non-optimising strategies have certain capacities to deal with uncertainty and conflict of interest that an optimising strategy does not possess. Grandori defined five decision models, which have distinctive properties for dealing with uncertainty and conflict of interest: optimising strategies; heuristic strategies; incremental strategies; cybernetic strategies; and random strategies. One of the main contributions of Grandori for this research is showing that each type of strategic decision making is a set of procedures for relating outcomes to objectives of the organisation in specific domains and under differing circumstances. Moreover, Grandori has shown that a decision maker needs to understand the state of uncertainty and conflict of interest that characterises a decision situation, eliminate the strategies that are not feasible in that particular situation, and select a feasible strategy accordingly.

Bourgeois and Brodwin [1984] have presented a typology of five strategy implementation models, with a specific focus on the role of the CEO in strategy implementation. The five strategy implementation types are called: commander model; change model; collaborative model; cultural model; and crescive model. The main contribution of Bourgeois and Brodwin to this research is that they have shown the importance of the effectiveness of different management styles, i.e. strategy implementation types, in relation to the specificalities of the corporate context. Moreover, have they emphasised the complexity of properties related to strategy implementation.

In their study, *Mintzberg and Waters* [1984] explore the complexity and variety of strategy formation processes by refining and elaborating the concepts of deliberate and emergent strategy. Moreover, they introduce eight different types of generic strategies, which embody differing degrees of deliberateness versus emergence. Mintzberg and Waters introduce the following eight types of generic strategies, which can be placed along a continuum between deliberate and emergent strategies: planned strategy; entrepreneurial strategy; ideological strategy; umbrella strategy; process strategy; unconnected strategy; consensus strategy; and imposed strategy. The main contribution of Mintzberg and Waters to this research is first of all that they have shown the fundamental difference between deliberate and emergent types of strategy, whereas the former focuses on direction and control (getting desired things done), the latter opens up the notion of 'strategic learning'. Moreover, they have shown the importance of emergent strategy especially in a context, which is too unstable or complex to

comprehend or too imposing to defy. Overall, strategy processes always walk on two feet, one deliberate and the other emergent. The corporate context determines the effectiveness of balancing opposing forces in order to realize intentions versus responding to an unfolding pattern of decisions.

In a study published by *Ansoff* [1987], he proposes a framework of differing configurations of strategic behaviour, or better strategic planning modes. Ansoff therefore characterises the four following types of strategic planning: organic model; reactive model; ad hoc management model; and systematic management model. The main contribution of his typology to this research is that Ansoff has shown that strategic behaviour is shaped by two main influences: the environment of the organisation and its internal capabilities. In return, the behaviour of the strategic planning function shapes both the capability and the environment. Moreover, Ansoff suggests that the basic relationship which applies to all varieties of strategic behaviour can be summarized as follows: *"Strategic evolution of an organisation is determined by a three-way feedback interaction between forces of the environment, the internal configuration and dynamics of the organisation, and its strategy."* [Ansoff, 1987]

In the last of the configurations paid attention to here, *Idenburg* [1993] has published a study on different styles of strategy development. Idenburg introduces distinctive types of strategic development processes, which he calls: rational planning; planning as aguided learning process; logical incrementalism; and emergent strategy. The main contribution of this typology to this research that Idenburg has shown the complexity and variety of different types of strategy development systems, in relation to different contexts as determined by levels of unpredictability and change of the external environment as well as the constituency of people and their interactions.

Overlooking the previous configurations, we can extract a number of interesting findings for our research question. First of all, as indicated in the texts, these configurations have contributed numerous learnings for this research. They have in common that they underline the importance of aligning the forms of (corporate) strategy systems with the specifalities of the function in its business context - *different corporate strategy systems for different purposes*. Furthermore, these configuration studies have shown the importance of shaping properties of strategy systems, in accordance with the properties of the business context, including both internal and external environment issues. As a side note, it is interesting to see that the diversity of configurations also point to earlier made arguments that there is not a consistent body of knowledge in strategy theory: *"over the years, researchers identified more and more strategy process types through both empirical and theoretical research, culminating in a wide range of strategy-process models and typologies. Most of these strategy-process models and typologies stand by themselves and lack a common basis and vocabulary."* [Feurer and Chaharbaghi, 1997]

In terms of content these studies do not extensively cover the field of corporate strategy systems in knowledge-intensive enterprises. This has a number of reasons. First of all, it is clear that all of these typologies have been developed with a certain context (in terms of place and time) in mind. Most of the existing typologies include numerous types, which are not serious options for knowledge-intensive enterprises, simply because of the specific characteristics of their internal and external environments. For example, it is hard to imagine effective corporate strategy systems in knowledge-intensive enterprises based on Miles and Snow's 'defenders' behaviour, Gandori's 'optimising' or 'heuristic' strategies, Bourgeois and

Brodwin's 'commander' model, Mintzberg and Waters' 'planned' strategy and Idenburg's 'rational planning' style, which all seem to point to predictable contexts, stable hierarchical structures and extensive formal strategic planning. Finally, a number of critical and determining properties for corporate strategy systems in knowledge-intensive enterprises seem to be missing, such as issues related to growth trajectories, critical (dynamic) capabilities, networking, human potential, and many others.

In other words, none of the existing typologies have been designed specifically for the specific situation of corporate strategy systems in knowledge-intensive enterprises. This can and should also be understood in a different way. One of the main assumptions behind the existence and relevance of configurations stems from the point that it acknowledges the fact that the effectiveness of a strategy in general, or a corporate strategy system in particular, is a function of the context (as determined by the various elements of the external and internal environment of an enterprise). This means that as the broader context changes, towards a knowledge economy, typical traits of effective corporate strategy systems will also change. In terms of the orientation of the research question and the need for context-sensitive and synthesising models, these studies provide inspiration for the research question. Especially, these and other configuration studies provide numerous guidelines and rich learning experiences about how to conduct this type of research. The research methodology in the configuration school is by now well accepted and quite well described. The research methodology of this research which aims to develop conceptual configurations of corporate strategy systems in knowledge-intensive enterprises is inspired by the studies conducted in the configuration school of strategy research.

To conclude this chapter, the state of the art study has made clear that there are various schools of strategy thought, and a number of debates about the content, process and context of strategy take place in the academic domain. We can learn from this that the academic field of strategy is fragmented offering a broad range of different, sometimes opposing views. In light of our research question, which asks for coherent patterns of variables, this is not an ideal starting platform. Moreover, we have observed that most studies are not specifically dedicated to the research object, i.e. corporate strategy systems in knowledge-intensive enterprises.

However, a small number of synthesising and integrative streams of thought can be observed in the literature. The configuration school of strategy research is considered as being one of such synthesising schools of thought. We have seen that this school has produced various studies on different aspects of strategy systems. In light of our search for synthesis, the configuration school is considered to be the most appropriate guideline for finding answers to the research questions. Therefore, we will aim to look for answers to our research question by drawing on these previous configuration studies in terms of research results and especially in terms of research methodology. However, still the main conclusion from the state of the art is that none of these previous (configuration) studies can provide substantial enough answers to the guiding research question, i.e. corporate strategy systems in the population of knowledge-intensive enterprises. Therefore, we will argue in the next two chapters that an explorative research approach is most appropriate. Before describing the research approach and methodology (chapter 4), we will aim in the next chapter to provide a number of initial requirements, mainly grounded in the state of the art, for a theory on configurations of corporate strategy systems in knowledge-intensive enterprises.

3 Towards a theory of configurations

This chapter builds a bridge between the study of the state of the art and the empirical phases of this research. The first paragraph of this chapter describes a set of orientation points, which are requirements to guide the exploration, for a theory on configurations of corporate strategy systems in knowledge-intensive enterprises. The second paragraph discusses the living systems lens, which serves as a frame of reference in our study on corporate strategy systems. In the third and final paragraph of this chapter, the starting assumption of this research is described in more detail.

3.1 Orientation points for a theory on CSS configurations in KIE

Based on the analysis of the state of the art as provided in the previous chapter, we can formulate a number of orientation points. This paragraph describes these orientation points for our theory building research. The orientation points should be understood as requirements for a theory on configurations of corporate strategy systems in knowledge-intensive enterprises. These requirements have been deducted from the literature state of the art in light of the research question.

Orientation point 'dynamics'

An issue that mingles through many of the described characteristics of corporate strategy systems and knowledge-intensive enterprises has to do with the factor 'time': for example shortening lifecycles, volatile change patterns and high frequency of activities [e.g. D'Aveni, 1995; Davis and Meyer, 1998; Courtney et al., 1997; Burgelman and Grove, 1996; Nefiodow, 1997]. Especially the interaction of the enterprise internal and external change trajectories is a crucial issue in corporate strategy [e.g. Ansoff, 1979; D'Aveni, 2001; Haeckel, 1999; van Wendel de Joode and Kemp, 2002; Meyer and Davis, 2003]. This has led some authors to point out that *"as the speed of change and the level of uncertainty in the competitive environments further increased it was realized that it is not possible to determine a strategic direction for an organization on a systematic basis but that organizations must constantly adapt to fast-changing circumstances and, hence, move towards dynamic strategy development."* [Feurer and Chaharbaghi, 1997] Also the review of studies on the nature of corporate strategic planning has highlighted the dynamic nature of the corporate strategy system [e.g. APQC, 1997; Kaplan and Beinhocker, 2003; Gavetti and Rifkin, 2005; Christensen, 1997; Campbell, 1999]. In order to provide insight into a dynamic phenomenon, such as corporate strategy systems of knowledge-intensive enterprises, a theory should sensibly include a dynamic view. In this sense, the conceptual model that is to be developed should consider not only a static view on the enterprise and the CSS, but certainly also a dynamic view at the same time. In other words, when conceptualising dynamic systems, which corporate strategy systems and knowledge-intensive enterprises are, there is a need

for theory to incorporate dynamic properties of the corporate strategy and knowledge-intensive enterprise systems, like for example change, innovation and corporate development. This orientation point should result in including issues like strategic change, innovation, evolution, lifecycles or corporate development in the conceptualisation of knowledge-intensive enterprises and corporate strategy systems.

To summarise, the first orientation point has to do with the dynamic nature of corporate strategy systems in knowledge-intensive enterprises and we can formulate it as follows: *a theory on configurations of CSS in KIE should incorporate the dynamics of knowledge-intensive enterprise systems.*

Orientation point 'functional and process view'

This research aims to contribute to the understanding of the fit of corporate strategy systems in different knowledge-intensive enterprise contexts. Corporate strategy systems are defined as the KIE subsystem that governs corporate development. On a most basic level, corporate strategy systems are seen as consisting of the dimensions function, process and context. In the state of the art, the majority of concepts either focus more on a CSS function (a functional view), like for example generic strategy types [e.g. Miles and Snow, 1978; Mintzberg and Waters, 1984; Porter, 1980], or more on a CSS process (a process view), like for example strategy development types [e.g. Idenburg, 1993; Grandori, 1984; Bourgeous and Brodwin, 1984; Ansoff, 1987]. In corporate strategy practice this distinction might be extremely hard and unnatural to make. One can not for example take a decision to acquire a competitor (content of strategy), without going through some appropriate steps of analysing, deciding and communicating this decision (process of strategy). Moreover, could such a decision not be seen decoupled from its context, e.g. the internal availability of resources for an acquisition or the legislative conditions in the external environment. Therefore, there is a need when modelling corporate strategy systems, as subsystems of the knowledge-intensive enterprise, to incorporate both function and process, both system and context. In other words, theory should incorporate both functional, process and contextual views of corporate strategy systems. Of course, what holds true for the enterprise as a whole also holds for the subsystems of that enterprise. Corporate strategy systems, as subsystems of the living corporate system, are understood as consisting of function and process. Specifically this means, that the set of propositions coming out of this thesis regarding corporate strategy systems should incorporate both function and process elements.

To summarise, this orientation point proposes to combine functional and process views on corporate strategy systems in knowledge-intensive enterprises and is formulated as follows: *a theory on configurations of CSS in KIE should incorporate both functional and process views of corporate strategy systems.*

Orientation point 'context-sensitivity'

Especially the studies in the configuration school point out that individual strategies have by definition only a limited life span and applicability [e.g. Quinn et al., 1993]. The effectiveness of a strategy depends not only on the function or the process of crafting a particular strategy, but very much on the fit between those two and the specific situation (time and place) in which the strategy is pursued [e.g. Mintzberg et al., 1998]. There are different strategies for different purposes, for different times and for different places. The functioning of the corporate strategy system has been metaphorically compared with the way a ship at sea

determines its course, sails out and steers its course and track and possibly correct its course. This metaphor shows the timeliness of strategies and its systems, in the sense that during course different unexpected situations are encountered, where a different pattern of decisions is required. Moreover, the apparent complexity, dynamics and unpredictability within the context of knowledge-intensive enterprises confront managers with uncertainty, risk and discontinuity of strategic decisions [e.g. Burgelman and Grove, 1996; Volberda, 1996; D'Aveni, 1995; Tushmann and O'Reilly, 1998; Davis and Meyer, 1998; Courtney et al., 1997; Berger and Buchner, 2000; Buchner et al., 1998; Beinhocker, 1998]. This in itself should also result in more flexible, timely and interactive ways of corporate strategy formation. The previous chapter has highlighted a number of studies in the configuration school [Miles and Snow, 1978; Grandori, 1984; Bourgeous and Brodwin, 1984; Mintzberg and Waters, 1984; Ansoff, 1987; Idenburg, 1993] that tried to create an understanding of why certain corporate strategy systems are well-fitted and others fail in pursuit of different ends, in different time periods and in different enterprises. However, these configurations have not been specifically constructed for the context of knowledge-intensive enterprises. Therefore a theory on configurations of CSS in KIE should integrate the notion of context-sensitivity into the conceptualisation.

To summarise, the third orientation point emphasises the relevance of context of corporate strategy systems and is formulated as follows: *a theory on configurations of CSS in KIE should integrate the notion of context-sensitivity (concerning time, place and purpose).*

Orientation point 'synthesis'

Within the broader context of the knowledge economy, the main focus of attention is on knowledge-intensive enterprises. Knowledge-intensive enterprises are defined as enterprises with mainly knowledge workers in the primary process or at least in the technical staff when this has a dominant influence on the functioning of the primary process [Weggeman, 1999]. We have argued in the previous chapter that knowledge-intensive enterprises have a number of distinctive characteristics. But, the state of the art also pointed out that the population of knowledge-intensive enterprises actually contains a broad diversity of enterprises. This broad variety of knowledge-intensive enterprises contrasts quite distinctively with the current state of scattered corporate strategy research, in the sense that there are many different schools of thought, perspectives and debates [e.g. Mintzberg et al., 1998; De Wit and Meyer, 1998; Volberda and Elfring, 2001]. Although the basic principles of corporate strategy are quite simple, e.g. strategies are means to ends, practice is not, and any useful theory on corporate strategy systems in knowledge-intensive enterprises should be able to correlate at least a number of the dominant context and system properties. In other words, the complexity of decision making and the multiple facets of knowledge-intensive enterprises are poorly matched by a rather low level of synthesising strategy theory.

To summarise, this orientation point has to do with the need for synthesis and is formulated as follows: *a theory on configurations of CSS in KIE should acknowledge the real-life complexity and multiple facets of enterprises.*

Orientation point 'practical relevance'

At the end of the day, the effectiveness of a strategy is as much as by anything else determined by a pattern of individual decisions and individual activity of (groups of) persons, in other words *"… strategy becomes simply the consistency or pattern that develops in*

behaviors" [Mintzberg in ICCS, 1998]. As was mentioned before, the role of theory is to provide a synthesising and consistent framework of thought. However, *"… managers have to act. … because managers have to act, or intervene, or change things, they have to simplify. So no matter how complicated the world is, managers have to act. The worst thing a manager can possibly do is not act."* [Mintzberg in ICCS, 1998] Clearly, in the practical act of decision making, such notions as group dynamics, bounded rationality, leadership, culture and politics do play a key role (see e.g. a review of the Cognitive School and the Political School in paragraph 2.3). One obvious example is that the theoretical distinction between strategic thinking (strategy formation) and acting (strategy realisation) is not a clearly marked borderline within such processes. This should be kept in mind when developing a theory on configurations for corporate strategy systems in knowledge-intensive enterprises. In other words, theory should provide a point of reference for practising strategists.

In summary, the last orientation point has to do with the practical relevance of a theory on corporate strategy systems in knowledge-intensive enterprises and is formulated as follows: *a theory on configurations of CSS in KIE should provide a point of reference for practising strategists.*

To conclude this paragraph, we have now a set of orientation points – related to dynamics, functional & process view, context-sensitivity, synthesis and practical relevance - that can help us to focus the search for answers to the research question. We have deducted these orientation points directly from the the state of the art and have formulated them as requirements for a new configuration theory in knowledge-intensive enterprises. Formulated at the beginning of the research process, the orientation points will help us to guide the exploration towards a theory on conceptual configurations of corporate strategy systems in knowledge-intensive enterprises.

3.2   The living systems lens as a theoretical frame of reference

> *"The modern corporation is quite possibly the highest form of human cooperation. Specialized resources in the form of labor, raw and finished materials, capital, and knowledge come together in a marvellous process that transforms these components into goods and services of greater value. This miraculous conversion is similar to the process by which dirt, water, sunlight, and a packet of information in the form of a seed are reorganized into a living plant. Like plants, corporations are born, grow, and die, reach out for resources, fend off predators, and compete with others. Business evolve over time, as less efficient corporations are replaced by more effective ones, whose successful practices are then emulated by others."* – Jerry Kaplan, 1994

For this research we make use of the living systems lens as a theoretical frame of reference. The living systems lens is briefly described in this paragraph. Actually, the living system lens is a synthesis of a number of strongly related streams of thought: *general systems theory* [e.g. Senge, 1990; Warschat, 1997; Bullinger and Warschat, 1995; Malik, 1996]; the view on organisations as *purposeful, organic systems* [e.g. Moerman, 1999; Ackoff, 1974; Senge, 1990; Warnecke, 1993; Pümpin, 1998; de Geus, 1997]; *theory of complex adaptive systems* [e.g. Wiekhart, 1997; Mittleton-Kelly, 2001; Kauffman, 1993]; and *co-evolution* [e.g. Eisenhardt and Galunic, 2000; Volberda and Lewin, 1999].

The living system lens will serve as a basic frame for looking at the empirical data gathered from knowledge-intensive enterprises. Although some authors [Eisenhardt, 1989] state that in explorative research there should be an *"ideal state of no theory"*, in practice it is not

possible to completely block the researcher's world view. Therefore, in this section we set out to make our meta-frame, which is considered necessary and helpful, explicit. The role and advantages of using a starting conceptual frame in explorative research is described by some researchers, such as e.g. Eisenhardt [1989], which she describes as an *a priori construct* – i.e. the conceptual construct that is already there before the data gathering starts. Applying the living systems lens as a priori construct supports the search for synthesis (the aim of the configuration school), as it acknowledges that every system fulfils functions, processes are taken care of, systems can be analysed in their environment, etc. In the living system lens, the knowledge-intensive enterprise is considered to be a living system and not for example a mechanic or other anorganic system.

Seeing the enterprise as a living system implies, first of all, that the company is regarded as a system, following in the footsteps of general systems thinking. Systems theory implies a shift from reductionism (search for the parts of which things are made of) to *expansionism* (search for wholes of which things are a part). As a system's essential properties and functions derive from the interaction of its parts (and not from the actions of its parts taken separately), management should be directed at the interactions of parts and not the actions of parts taken separately. Moreover, it implies replacing the process of analysis (understanding by taking apart) by the *process of synthesis* (understanding by thinking about what it is a part of). As the performance of a system depends on how its parts fit (not on how they perform separately), problems are, in most cases, best treated not where they appear. Furthermore, there is a need for approaching problems in a coherent and integrated manner through handling systems of problems instead of taking every problem apart. As reality consists of systems of problems, management should deal with sets of interacting problems rather than problems taken separately.

Secondly, the living systems lens implies that the knowledge-intensive enterprise is *organic and purposeful*. Even though general system thinking might apply to different types of systems - such as e.g. mechanical versus organic systems - in this thesis the enterprise will be regarded as being a specific type of system, namely an *organic and living system*. In this regard, *vitality* becomes an interesting concept. Vitality, or liveliness, denotes the power to sustain life and is a notion, which was originally only denoted to living organisms. According to among others Warnecke [1993] - as opposed to the traditional paradigm with its static system elements and a hierarchical, mechanical approach to organisations - a living system (or 'fractal company' in the words of Warnecke) must have the decisive characteristic of vitality. Vitality implies that the enterprise as a living system is formed in such a way that relationships within the system are stronger than those with the outside through the continuous interaction and interplay of forces of its subsystems. Vitality also implies that enterprises exhibit different levels of 'health' or fitness during different times and in different situations, as they will adhere to rules of evolution, in the sense that the system and its subsystems within their entire lifetime go through an organic lifecycle: *"vitality of an organisation can be observed over time, whereby several 'stages of life' can be distinguished: conception - realisation - maturity - optimisation - aging and overaging"* [Warnecke, 1993].

As is also reflected in the definition of knowledge-intensive enterprises (see previous chapter), the living system lens implies seeing the knowledge-intensive enterprise as a purposeful system [Ackoff, 1974]. This notion is labelled *purpose-based view of the firm* and relates to concepts such as *strategic choice* [Child, 1972], *managerial intentionality* [Prahalad

and Hamel, 1989] and *directed evolution* [Meyer and Davis, 2003]. The purpose-based view of the firm implies that the main difference between all other living systems and living social systems, i.e. between animals and people, is that the subgroup of enterprises have intentionality, they have purpose. They can change the course of development through reflection and intended action. Moreover, directed evolution is regarded as the key function of management [Meyer and Davis, 2003]. In this thesis, we follow the ongoing business thought. Management in general and corporate strategy systems specifically are regarded in light of this corporate development discussion. The corporate strategy system is the navigational system in this quest, through e.g. making purpose explicit and implementing its strategic implications.

Thirdly, the living systems lens implies that the knowledge-intensive enterprise is dynamic and developing, i.e. it is a *complex adaptive system* that develops according to processes of *co-evolution*. The living system is considered to be a part of a natural hierarchy of systems, i.e. any living system consists of sub parts and is itself part of a larger whole; there is a natural hierarchy, a network of networks. Moreover, within the living system and in its relation with the environment, there are a number of continuous exchange processes taking place, such as the exchange of matter, of energy, etc. There is a natural pattern of exchange relations, a web of connections. Development of the enterprise throughout time implies that the living system, its parts and the ecosystem are in constant motion (when adding the factor time). Basically, change processes can be internal and external to the living system. Moreover, change can have different causes, different effects. There are different points of view, different explanations and models of how the living system changes throughout time, such as for example the lifecycle perspective, the emergence perspective, evolution/revolution, turbulence, change management, etc. As change is considered to be multidirectional, i.e. there is multidirectional causality, this thesis follows the co-evolution perspective. *Co-evolution* in a business context implies that the development paths of the enterprise are directly influenced by and directly influence the development paths of other systems in its ecosystem. Note that the same holds true, of course, for the development paths of enterprise subsystems within the enterprise system and their stakeholders.

The interrelationship, interaction and interconnectivity of elements within a living system and between a system and its environment can give rise to behaviour that is both complex and unpredictable. According to Mittleton-Kelly [2001], within social systems (which enterprises are) co-evolution should lead to placing emphasis on the 'evolution of interactions' – on the relationship between co-evolving entities and also lead to placing emphasis on enterprises not just adjusting to the environment but understanding that the evolution of one domain is partially dependent on the evolution of the other, in other words one domain changes in the context of the other [Mittleton-Kelly, 2001]. This is in line with Lewin and Volberda who state that co-evolution offers a perspective on how enterprises systematically influence their environments and how enterprise environments (comprised of other enterprises and populations) influence those enterprises in turn. In that sense, *"change is not an outcome of managerial adaptation or environmental selection but rather the joint outcome of intentionality and environmental effects."* [Lewin and Volberda, 1999]

In more detail, the concept of co-evolution has the following implications for corporate strategy systems and knowledge-intensive enterprise contexts:

- The activities and events of enterprises influence the development of their environment, i.e. the players (for example competitors, customers and suppliers) within their environment;
- Vice versa, the activities and events of the players within their environment influence the development of enterprises;
- As environments in the long run 'naturally select' enterprises through for example resource strengths, distinctive capabilities and other competitive advantages, enterprises can try to influence this through guiding their adaptation process;
- In this sense, corporate adaptation processes and 'natural selection' are not wholly opposed forces but are fundamentally interrelated;
- As business sector and industry environments go through natural lifecycles of 'variation and selection', enterprises will have to incorporate and shape their corporate development processes and according choice of strategies in alignment with these long term macro-processes;
- The natural cycle of 'exploration and exploitation' might be in different stages of progression in different geo-product markets an enterprises is involved in and therefore might in any point of time for an individual enterprise take place simultaneously;
- As the embeddedness of enterprises in their institutional context is a natural reason for enterprises' resistance to change, enterprises will have to break through these resistances in search for continuous renewal;
- In this sense, corporate strategies for growth and development involve the decision making process around a continuous interplay of the exploration of new business opportunities and the exploitation of these business opportunities.

From a research methodological point of view, the concept of co-evolution implies that within any theory explaining differences in performance of individual enterprises, environmental change should be regarded as an endogenous, not an exogenous variable. Moreover, it implies that the classical *"dependent-independent variable distinction becomes less meaningful since changes in any one variable may be caused endogenously by changes in others"* [Lewin and Volberda, 1999].

In summary, we will conduct this research within the frame of reference of the living systems lens, i.e. knowledge-intensive enterprises are treated as being living systems: systems that are organic, purposeful, complex adaptive and developing according to the processes of co-evolution. The living system lens is an explicitation of the researcher's views of thought that will guide us - as an 'a priori construct' – through all sequential steps of the explorative research process.

3.3   Starting assumption of this research

With the research question asking for configurations of corporate strategy system properties (in the context of knowledge-intensive enterprises), there is one obvious starting assumption that underlies this research. Along the lines of the configuration school of strategy research, we can formulate this assumption as follows:

We assume that the whole population of knowledge-intensive enterprises and their corporate strategy systems can be studied through constructing a rather small number of representative configurations.

Clearly, this only makes sense if such configurations can indeed be constructed through an explorative research. Within the configuration school a number of reasons can be found why constructed configurations might be representative of the empirical reality: *"our first point argues that it is the environment that causes adaptation in the long run by allowing only a limited number of synergistic and compatible organizational forms to survive. Our second point, not inconsistent with the first but departing from the analogy with the biological species, argues that organizations seek to adapt themselves to the dictates of consistency, synergy and fit".* [Quinn et al., 1993] Moreover, one of the main motivations for investigating configurations is the basic assumption that *"there are only a rather limited number of possible strategies (and structures) feasible in any type of environment … argument for the existence of configurations is that organisational features are interrelated in complex and integral ways … Thus each element makes sense in terms of the whole – and together they form a cohesive system. Cohesive configurations reduce the number of possible ways in which the elements combine".* [Miller, 2001]

There are clear synergies with the living system lens assumption, for example in terms of the importance of notions such as synthesis, multidirectional causality and co-evolution. Moreover, the configuration assumption also relates to the 'form follows function' adagio: *"the appropriateness of a strategy in general, as well as the relative effectiveness of its various elements, will be a function of … economic, competitive and customer factors, as well as conditions in international markets".* [Miller, 2001] Translated to the research question, this means that the configuration of corporate strategy system functions, processes and properties is considered to be a function of the properties of context (internal and external environment of the knowledge-intensive enterprise). As will be described in more detail in the following chapter, the assumption of configurations also has implications for the research methodology.

In summary, the main assumption underlying this research is that the population of knowledge-intensive enterprises can be better understood through the construction of configurations of corporate strategy systems. Moreover, we can conclude that the configuration school provides some good reasons to assume that configurations of corporate strategy systems explored in a limited number of cases can indeed be representative for the whole population of knowledge-intensive enterprises.

To conclude this chapter, the explorative research is guided by an 'a priori' conceptual framework that consists of three pillars. First of all, there are a number of orientation points that we have deducted from the state of the art and that are requirements for a new theory of configurations. Secondly, a frame of reference is provided by the living system lens. Finally, the starting assumption of this research is that configurations can be constructed and provide insight in the whole population of knowledge-intensive enterprises. These three pillars together constitute the conceptual foundation on which the search for a theory on configurations of corporate strategy systems in knowledge-intensive enterprises is grounded. We can now proceed to the next chapter in order to determine an appropriate methodology for conducting this search.

4 Research Methodology

This chapter presents the research methodology and explains why an explorative research strategy is chosen. The first paragraph will define the research strategy and methods. The second paragraph will review the research methodology in light of the configuration school of strategy research. The third paragraph will describe the approach and instruments for data collection from the cases, as well as the sampling logic applied to the selection of cases. The fourth paragraph will give an overview of the two main phases of cross case analysis for constructing configurations. The fifth and final paragraph will highlight the case study tactics for increasing validity and reliability of the results.

4.1 Research Strategy and Methods

According to van Aken [1996] the mission of business science is the development of scientific knowledge with regard to the design and management of profit and non-profit organisations and the transfer of that knowledge to business professionals. In business science, research can in principle be of three types [Robson, 1993]: exploratory studies aim to find out what is happening and seek new insights; descriptive studies portray an accurate profile of certain circumstances; and explanatory studies seek an explanation of a situation or a problem. Explorative research is the natural approach specifically if the research problem concerns the clarification of the understanding of a problem; or, in other words, if the area of research is relatively unknown. Generally, explanatory research is rather a hypothesis testing approach whereas explorative studies are rather *a hypothesis generating approach* [see e.g. Yin, 1994; Saunders et al., 2000]. Studies that generate hypothesis are also described as theory building studies: *"in sum, building theory (from case study research) is most appropriate in in the early stages of research on a topic".* [Eisenhardt, 1989, pp. 548] More than anything, a research strategy should be appropriate to the nature of the study and the guiding research question statement. In this regard, Yin [1994] has identified five general research strategies: case studies, experiments, surveys, archival analysis and history.

With the focus on contemporary events in the knowledge economy, the 'archival analysis' and the 'history' strategy seem inappropriate. The remaining three traditional research strategies could be described as follows [Robson, 1993]:

1. *Experiment*: measuring the effects of manipulating one variable on another variable;

2. *Survey*: collection of information in standardised form from groups of people;
3. *Case Study*: development of detailed, intensive knowledge about a single case or of a small number of related cases.

The case study, which *"is a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence"* [Robson, 1993], seems most appropriate because - in the situation of corporate strategy systems in knowledge-intensive enterprises - the focus is clearly on current events and there is no control over events. In another definition, Yin [1994] describes a case study *"as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident."* In other words, the case study strategy is relevant to cover contextual conditions when it is believed that they might be highly pertinent to a phenomenon of study. Of course, within the posed research scope there is a large number of interactive issues involved, which can only be understood in a highly context-specific manner. This is one of the most cited reasons for choosing a case study research strategy. Furthermore, a case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points. A case study research as a result relies on multiple sources of evidence, with data needing to converge in a triangulation fashion, and furthermore benefits from the prior development of theoretical propositions to guide data collection and analysis [Yin, 1994].

In other words, the case study as a research strategy comprises an all encompassing method. The research design can incorporate specific approaches to data collection and data analysis. As will be described later on, the case study can be used in different ways.

In view of the above, and considering the current state of the art, we have chosen the research strategy of explorative case studies. The explorative nature of this investigation stems clearly from the argumentation provided in the previous two chapters that there is currently not a broad enough body of knowledge to build on for constructing corporate strategy systems configurations for knowledge-intensive enterprises. In summary, we can characterise the research strategy as *an explorative, multiple case studies strategy, where the overarching aim is to build theory* in the form of CSS configurations.

4.2   Research methodology in the configuration school

In the configuration school the focus of research is on trying to understand how diverse elements related to corporate strategy systems – for example the strategy, the processes by which it is formed and gets realised, the strategist, structure, power, and culture – combine to form 'configuration' that suits particular contexts. Configurations are commonly occurring clusters of attributes or relationships that are internally cohesive [Miller, 1984]. Next to their internal cohesion, configurations are said to be distinctive regarding their appropriateness in context, as *"the various elements of organizations – their strategies, strategy-making processes, structures, support systems, cultures, and so on – tend to cluster together naturally to produce certain relatively distinct overall 'configurations' appropriate to particular widely encountered situations, which we call "contexts".* [Quinn et al., 1993]

A distinction is made between two types of configurations. On the one hand there are conceptual configurations, which are typically qualitative in nature and are also referred to as 'typologies'. Conceptual configurations are derived from theoretical and qualitative considerations: *"We use the term typology to refer to classification schemes or sets of*

configurations that have been derived without a formally collected and quantitatively analysed database. Typologies are exclusively the products of the concepts and intuitions of theoreticians." [Miller and Friesen, 1984] On the other hand, there are configurations, which are derived from quantitative empirical data analysis and are also referred to as 'taxonomies': *"when we use the term taxonomy, on the other hand, we refer to a classification scheme or set of configurations that has been derived from a formal database using replicable, quantitative techniques."* [Miller and Friesen, 1984]

This research is a quest for discovering the first type of configurations, *conceptual configurations*. Next to the distinction between typologies and taxonomies, another distinction is made [Miller, 1984] between three different shapes of configurations:

- Configurations of different variables (sets of different variables in different contexts);
- Configurations of variables and relationships (sets of different relationships between variables in different contexts);
- Configurations of values of variables (sets of different values of variables within different contexts).

As the main idea behind this research is to not only uncover distinctive properties of corporate strategy systems, but furthermore explore how these properties are configured according to specific contexts, this thesis will explore the third type of configurations. This research will explore configurations of corporate strategy systems for knowledge-intensive enterprises in different contexts, or more concretely configurations of property values characterising the knowledge-intensive context and the property values characterising the corporate strategy system. For developing such configurations (conceptual configurations of values of variables), a number of indications can be found on the research methodology that is to be used. The configuration school emphasises a particular approach to researching strategic management issues, which is called 'synthesis': *"in its purest form, the approach of synthesis may combine all five of the attributes discussed below, although the first two are most critical".* [Miller, 1984] The first feature is that a large number of qualities – ideally of state, process, and situation – are studied simultaneously in order to yield a *detailed, holistic, integrated image of reality*. Secondly, data analysis and theory building are geared to *finding common natural clusters* among the properties studied. Thirdly, causation is viewed in the broadest possible terms. The approach of synthesis is really the search for *networks of causation*. Each configuration has to be considered as a system in which each property can influence many of the others by being an indispensable part of an integrated whole. There are no purely dependent or independent variables in a system: over time, many things depend on many other things. A property that drives others at one point will itself be driven by some of those others later; and commonly, properties drive each other concurrently. As a fourth point of conceptual configurations, Miller mentions that time and process should be taken into account whenever possible. And finally, despite efforts to measure and quantify, anecdotal data are gathered to help explain the more systematic findings. We can see clear resemblance with some of the orientation points that have been formulated in the previous chapter. Moreover, concerning the synthesising approach of configurations and the role of the appropriate research methods following is highlighted by Miller [1984]:

- Configurations are multidimensional;
- Each configuration should characterise numerous aspects of many organisations;
- Configurations should have predictive importance;
- Establishing the boundaries of configurations may be a problem;

- There is not one best set of variables (or elements) that should be used to describe all sets of configurations;
- Configurations may describe departments, divisions, organisations, or even networks of organizations.

Two main remarks should be made. First of all, there is an important role for context variables in the study on configurations, as the configurations are explored according to the specificity of the context. Therefore, the existence and relevance of configurations directly results from the fact that the fit of a corporate strategy system is a function of the context (as determined by the various elements of the external and internal environment of an enterprise). This should not be confused with contingency theory. As the following table explains, there are clear and important distinctions between configuration and contingency theory.

Underlying Assumptions	Contingency Theory	Configuration Theory
Dominant mode of inquiry	Reductionistic analysis	Holistic synthesis
Social system cohesion and constraint	Aggregates of weakly constrained components	Configurations of strongly constrained components
Relationships among attributes	Unidirectional and linear	Reciprocal and nonlinear
Equilibrium assumptions	Quasi-stationary equilibrium	Punctuated equilibrium
Primary mode of change	Continuous progressions	Episodic bursts
Effectiveness assumptions	Determined by situational context	Equifinality

Table 4-1: Contingency versus configuration theory [Meyer, Tsui and Hinings, 1993]

Note that the concept of 'episodic bursts' relate to what Miller & Friessen [1984] describe as a quantum view on change. Configurations are so strongly interrelated systems that if there is a change from one configuration to the next, this involves a revolutionary and radical step change. The concept of 'punctuated equilibrium' has been discussed in light of the strategic change debate (see chapter two). The concept of 'equifinality' [see e.g. Paauwe, 2004, p. 54] implies that *"multiple unique configurations can result in the same kind of maximum performance"*.

A second remark is that studying configurations has an implication on how to deal with and how to understand variables and their values. As the table highlights, in configuration theory, the mode of inquiry is synthetic, which implies that the relationships between variables (and their possible values) are not unidirectional and linear, as is the assumption of contingency theory, but *reciprocal and nonlinear*. This has important implications for the development of conceptual configurations in knowledge-intensive enterprises. The context variables can not be said to be the determining variables and the strategy system variables the dependent ones. This would not be in line with *'holistic synthetic'* reason, which is a search for occurring patterns of context and system variables. Mintzberg [1983], on this issue, states that one normally sees *"… situational factors as independent variables (that is, as given) and the design parameters as dependent ones (that is, to be determined). These assumptions will, of course, be dropped when we get to the configurations. As we argued earlier, because the configurations are systems, no one of their parts is independent or given; rather, each is integrated with, and hence dependent on, all the others."* The notion of 'reciprocal and nonlinear' relationships between variables is also found in the living system lens and the

concept of multidirectional causality and co-evolution (specifically considering internal and external environment attributes).

In summary, this explorative research is a quest for developing a typology, in the shape of configurations of relationships between functions, processes and properties of the corporate strategy system and properties of its context. We have argued that the configuration school provides the most promising guidelines for answering the research questions. Therefore the research methodology is based on the guidelines for conducting research in the configuration school.

4.3   Data collection

This research is primarily based on the empirical data collected from twelve knowledge-intensive enterprises. This section describes the logic of case study selection as well as the approach and tools that have been used to collect the empirical data.

Sampling

In explorative case study research, cases are preferably selected based on 'theoretical sampling' principles [Eisenhardt, 1989, pp. 537]: *"the goal of theoretical sampling is to choose cases which are likely to replicate or extend the emergent theory".* In this way, cases are selected from a theoretically defined population: *"The concept of a population is crucial, because the population defines the set of entities from which the research sample is drawn"* and *"The cases may be chosen to replicate previous cases or extend emergent theory, or they may be chosen to fill theoretical categories and provide examples of polar types."* [Eisenhardt, 1989, pp. 537] As shown in the figure below, the sample of case studies for this research is based on two theoretical dimensions.

Figure 4-1: Sampling of the case studies from this thesis

The first dimension is based on the defined categories of knowledge-intensive enterprises (see chapter two): talent-intensive, technology-intensive and information-intensive enterprises. The talent-intensive KIE are represented by two cases selected from the professional services industry. The technology-intensive KIE are represented by five cases selected from the automotive industry. The information-intensive KIE are represented by five cases selected from the ICT (information- and communication-technologies) industry. The second categorisation measure relates to the form of the organisation, as reflected in the three theoretical categories of: small, medium sized enterprises (single business); larger enterprises (multi business); and networked organisations. In this way, the twelve case studies taken together cover a broad spread of theoretically possible knowledge-intensive enterprises and thus enhance the coverage of contexts.

Data collection approach and tools

The empirical data for this research is based on content analysis of documents, websites, a study of secondary literature, and, in particular, on face-to-face (semi-structured) interviews with case study representatives. Also for some cases, use has been made of a survey research instrument. The interviews took place from November 2001 to November 2003. Case study representatives from five different European countries were interviewed. They can roughly be grouped into two categories. The category of strategic planners consists of people who are actively involved in organising and conducting corporate planning activities. Especially for the large enterprises, this category of interviewees has been dominant. The other category is that of managers. It consists of company managers who are responsible for corporate strategic decisions. The sources and data collection tools used per case study are listed in the table below. Note that apart from Linux, all case names are fictive names.

Cases	Interview participants	Additional data collection tools			
		Survey	Company Documents	Obser-vation	Third party sources
CreaStudio	• CEO • Project managers (3x)	(X)	**X**	**X**	
InnoService	• CEO (old and new); CFO • Department managers (2x) • Project managers (4x)	**X**	**X**	**X**	
AdaptIT.com	• CEO; COO • Business development manager • Project manager	**X**	**X**	**X**	
VERYSoft	• Business development manager • Marketing manager • Quality manager • Product strategist • Consultant (external)	(X)	**X**	**X**	
SolveTix	• CEO; CFO; COO; CIO • Marketing and business development manager • Consultants (external, 2x)	(X)	**X**	**X**	
Linux	• Managers from network partner companies (3x) • Network professionals (2x) • External expert	**X**	**X**	**X**	**X**

TelEquip	• Senior corporate planners (5x)	**X**	**X**	**X**	**X**
MachOne	• CEO • Senior management team (2x) • Unit managers (3x)	(X)	**X**	**X**	
CoolSystem	• Senior corporate planners (2x) • Senior manager		**X**	**X**	**X**
InnoMobile	• Senior corporate planners (2x) • Company managers (3x)		**X**	**X**	**X**
DriveSupply	• Senior corporate planners (2x)		**X**	**X**	**X**
GlobalCar	• Senior corporate planners (3x) • Consultant (external)		**X**	**X**	**X**

Table 4-2: Empirical data collection for exploring the configurations – case studies

The use of the survey research instrument is explained in more detail below.

The survey research instrument

The survey has been used as data collection instrument in a number of case studies especially in order to go into more detail and extend the data base. The data collected through the survey has been mainly used in the second phase of the cross case analysis (exploring patterns of relationships). It has been send through mail and the survey filled out by case study participants has been the baseline for the proceeding interviews and discussions with them. The research instrument with all its details can be found in the appendix. The survey is structured in four main parts:

- *Fact Sheet*: general facts and figures about the company are asked. Part of the questions make a distinction between answers for the current ("currently") and future situation ("in 3 – 5 years").
- *Corporate Environment*: external factors that might have an impact on the enterprise. The areas of general environments, market, customers, technology, suppliers, competitors and partnerships are covered. Each section consists of two questions: how <u>strong</u> and how <u>often</u> do you expect changes within …? The strength of the impact measures the 'volatility' of change and the frequency of change measures the 'dynamics' of change. The question is divided in three time horizons: current situation, time horizon of the next 2 – 5 years and time horizon of the 5 – 10 years.
- *Corporate Strategy System*: covers different dimensions of the corporate strategy system - Purpose, Posture, Position, Process and Progress. Questions cover both a current and future perspective.
- *Critical Success Factors*: various critical success factors for corporate strategy systems are given, where the importance for each of them is measured for the current situation as well as from a future point of view (in 3 – 5 years).

Note that as a logical consequence of the iterative nature of the explorative research study, the emerging conceptual model has been modified and transformed throughout the process. The structure and content of the survey reflects the conceptual dimensions of the emerging theory at the time of the start of the data collection. For example the five categories under corporate strategy systems (purpose, posture, position, process, progress) have during the process been transformed (into: various properties, functions and processes of the corporate strategy system, see chapter 6). However, in more detail the data gathered can be quite

logically tied to the final description of the functions, processes and processes, which will be presented in chapter six. The connection between the conceptual issues from the survey, the theoretical underpinnings and their final application in the case study analysis and description is provided schematically in the following table. Note that the meaning behind the name and index of the properties (the right two columns) will become clear in chapter 6 where these properties are determined.

Dimension	Concept	Main source(s)	Used for Property	
CONTEXT	Age / Size	own	IC05	Corporate maturity
	Business Sector	own		*(sampling)*
	Growth Rate (people, turnover, profitability)	own	IC04	Corporate maturity
	Corporate Maturity	Pümpin	IC05	Corporate maturity
	Industry Maturity	Porter, 1980	EC01	Environmental change pattern
	Dominant Customer Behaviour		EC04	Value web position
	Technology Maturity	Popper & Buskirk, 1992	EC01 / IC07	Resources advancement
	Dominant Relationships (with suppliers)	Webster, 1992	EC03	Stakeholder integration
	Competition Intensity	own	EC02	Competitive complexity
	Collaboration Intensity (with partners)	own	EC03	Stakeholder integration
PERCEPTION of TURBULENCE	Amplitude of impact	Symphony project [Kemp et al., 2001] - Based on theory: Volberda, 1998; D'Aveni, 1999; Buchner & Wiegand, 1999	EC01-04	External environment
	Frequency of impact		EC01-04	External environment
	Heterogeneity of Impact		EC01-04	External environment
	Interconnectedness of Impact		EC01-04	External environment
	Unpredictability of Impact		EC01-04	External environment
CORPORATE STRATEGY SYSTEM	Intent	De Wit & Meyer, 1999.	CSS FCT	Providing purpose
	Mission	own	CSS FCT	Providing purpose
	Vision	own	CSS FCT	Providing purpose
	Strategic Objectives	own	CSS FCT	CSS Functions
	Strategic Orientation (1 - external pulses)	Haeckel, 1999.	IC11	Adaptive strength
	Strategic Orientation (2 - future)	Courtney et al, 1997	CSS FCT	Building resources
	Strategic Behaviour	Miles & Snow, 1978	CSS FCT	Positioning competitively
	Scope		CSS01-05	CSS Principles
	Competitive Advantage	Porter, 1985	CSS FCT	Positioning competitively
	Value Creation (1)	Stalk, Evans and Shulman, 1992	CSS FCT	Composing businesses
	Value Creation (2)		CSS FCT	Building resources
	Critical Capabilities	Capron, 2000	CSS FCT	Building resources
	Strategic Analysis	Regner, 2001	CSS PRO	Corporate intelligence
	Strategy Formation (1 - process)	Mintzberg & Water, 1984	CSS08	Processes blueprint
	Strategy Formation (2 - decisions)	Shrivastava, 1994	CSS09	Decision making flow
	Strategy Implementation	Bourgeois & Brodwin, 1984	CSS PRO	Strategy realisation
	Timeframe	Feurer & Chahabarghi, 1997	CSS03	Time horizon consistency
	Form	Feurer & Chahabarghi, 1997	CSS01	Strategy format
	Roles & Repons. (1 - involved)	Feurer & Chahabarghi, 1997	CSS10	People involvement
	Roles & Repons. (2 - ownership)	Feurer & Chahabarghi, 1997	CSS11	Management responsibility
	Corporate Growth (1 - direction)	Karnani, 2000	IC10 / CSS FCT	Growth horizon
	Corporate Growth (2 - mode)	Karnani, 2000	IC10 / CSS FCT	Composing businesses
	Innovative Capacity	Disrupt-IT, 2004	IC07 / IC10	Resources advancement
	Critical Success Factors	Symphony project [Kemp et al., 2001] & KnowledgeBoard survey [Kemp et al., 2003]		Critical Success Factors

Table 4-3: The survey research instrument as part of the research process

The interrelation of data collected from various sources and with different instruments per case study has facilitated the exploration of CSS functions, process and properties as well as their relations with context properties.

4.4   Data interpretation and analysis

The objective of the followed methodology for data analysis is to build theory in the form of synthesising, conceptual configurations. The process of building configurations is grounded on the principles of the configuration school and makes use of the scenario technique. This process has been structured in two main phases: first an investigation of the characteristic functions, processes and properties of corporate strategy systems and their context; and secondly an exploration of the natural relationships between these context and system properties, the formulation of propositions (about these relations) as well as a description of the resulting conceptual configurations.

The construction of conceptual configurations based on twelve case studies is a highly iterative process, switching back and fourth between the emerging theory and the empirical data. For structuring this process the scenario technique is used. According to for example Gausemeier [et al., 1996], a typical scenario construction process consists of four steps:

- Scenario preparation: defining the scenario field;
- Scenario field analysis: determining influence and key factors;
- Scenario forecast: elaborating projections for key factors;
- Scenario creation: raw scenario construction linking projections to form logically coherent patterns (scenarios).

Although scenarios are coherent pictures of possible futures, in its essence a scenario has comparable qualities as a configuration: it is a complex system; it is an intrinsically coherent, logical pattern of relationships between values of variables; and it provides synthesis among various pieces of known information. Moreover, both are conceived, simplified pictures of a complex, networked reality.

By combining the methodological approach of the configuration school (see paragraph 4.2) with the data handling instruments of the scenario technique, following two main phases are followed in the process of constructing conceptual configurations through the cross case analysis:

- *Phase 1 – Exploration of functions, processes and properties*: within the defined dimensions of context and system, the determining properties ('variables') and its possible values are explored. Also, the corporate strategy system functions and processes are explored. This phase is a cross case analysis, where the cases are analysed 'horizontally', i.e. across each case similar properties in each dimension are identified, clustered and defined. For each property different values are also identified. The resulting set of variables with values is validated with case study participants and neutral experts (researchers & consultants).

- *Phase 2 – Exploration and description of configurations*: through exploring the pattern of relationships between the functions, processes and properties, configurations are designed. This step is a cross case analysis conducted 'vertically', i.e. based on the specific pattern of relationships within each case study, an overarching pattern of relationships is uncovered and made explicit in the form of propositions. The results of this phase are also validated with case study participants and neutral experts.

These two phases are described in more detail below.

Cross case analysis – phase one: determination of functions, processes and properties

The main goal of the first analysis of the empirical data is to determine a set of functions, processes and properties, which characterise corporate strategy systems in knowledge-intensive contexts. The strong empirical component ensures a practical relevance of this crucial step towards developing configurations. The iterations between the case studies and the evolving theory ensure a good balance between conceptualisation and empirical data in this research, making sure that the unfolding theory is deeply grounded in the empirical data: *"the central idea is that researchers constantly compare theory and data – iterating toward a theory which closely fits the data"*. [Eisenhardt, 1989, p.541] The result of this first phase represents a unique set of functions, processes and properties, explored specifically for the area of research (corporate strategy systems and knowledge-intensive enterprises), and

strongly grounded in empirical data. The phase exploring functions, processes and properties, in more detail, follows a number of steps:

- Identification of relevant case studies and conduction of case study data collection (see previous paragraph).
- Conduction of in case analysis and feedback validation of case study report with participants of companies.
- In a horizontal way, mainly by the use of tables (Excel sheets) issues that are related are clustered across cases. For these related issues (e.g. corporate maturity), differences and similarities between the various cases are identified (e.g. birth, growth and maturity stage).
- In an iterative process, these data clusters are aggregated until finally a concise set of functions, processes and properties results. This set is considered to be most representative for knowledge-intensive enterprises, and the properties are considered to be the most distinctive characteristics between various samples of the population.
- The concise set of functions, processes and properties is validated through discussions with other researchers, practitioners and experts.
- Finally, the set of findings are compared with similar and contrasting literature.

The set of functions, proceses and properties that results from this first phase in cross case analysis is the input for the second phase.

Cross case analysis – phase two: construction of configurations

The second phase of the cross case analysis takes the set of identified functions, processes and properties and sets out to explore the nature of the relationships between these in knowledge-intensive contexts. The main aim of this second phase of cross case analysis is to understand how and why different relationships between variables exist. The aim is to get a deeper understanding of the patterns of functions, processes and properties within different contexts. The data analysis within the cases generally follows a sequence of steps. Along the different steps, the 'big pictures' or patterns of relationships between CSS and context properties become clearer and clearer, which will allow for the configurations to be iteratively developed and improved. Also the second phase of cross case analysis is highly iterative, switching back and forth between conceptualisation, propositions (the start of a new theory) and the empirical data. This is in line with the nature of the process, as shaping hypothesis *"in theory-building research involves measuring constructs and verifying relationships."* [Eisenhardt, 1989, p. 543] Accordingly, the iterative process that is followed consists of the following main steps:

- Making the starting conceptual frame work explicit - consisting of the a priori construct and starting assumption (see chapter 3);
- Defininition of the building blocks of the configuration, i.e. functions, processes and properties (see chapter 6 and previous section);
- Additional data collection (where required) using the survey data collection instrument, combined with interviews;
- Where relevant extension of the in case analysis;
- Validation of the in case analysis, by feeding back the case study reports with the participants from the case study companies and, in some cases, checking of findings with the additional researchers;
- Update of the case study report accordingly;

- Draft of the relationships between the functions, processes and attributes in the cases and draft of the according propositions about the relationships (see chapter 7);
- Validation of these propositions and configurations by comparing with the twelve case studies;
- Validation of the propositions and configuration hypothesis by comparing them with the main rival and supporting theories.

In this way, the cross case analysis is conducted in a two phase process. By following the guidelines of the configuration school and applying the scenario technique for data handling, the construction of conceptual configurations is made feasible.

4.5   Validity and reliability of the empirical research

In the implementation of the presented explorative research strategy along the various phases of the research process, several measures are taken in order to increase the validity and reliability. More specifically, measures are taken in order to aim for highest possible levels of construct validity, internal validity, external validity and reliability.

Validity overall *"is concerned with whether the findings are really about what they appear to be"* [Robson, 1993] According to for example Bortz and Döring [1995], validity is the most important criterion of data quality. Validity is often divided in construct, internal and external validity. According to some [see e.g. Yin, 1994] internal validity is only relevant for causal or explanatory case studies, in which causal relations between two events is determined. However, the *"concern over internal validity, for case study research, may be extended to the broader problem of making inferences. Basically, a case study involves an inference every time an event cannot be directly observed."* [Yin, 1994, p. 35] Construct validity *"is especially problematic in case study research. People who have been critical of case studies often point to the fact that a case study investigator fails to develop a sufficiently operational set of measures and that 'subjective' judgements are used to collect the data."* [Yin, 1994, p. 34] Construct validity refers to the extent to which the data collection mechanism is free from both random and systematic error, and indicates what is supposed to be measured or what is believed to be measurable. The validity of e.g. a questionnaire partly depends on whether the findings are really about what they appear to be [Saunders et al., 2000]. External validity *"refers to the extent to which the findings of the enquiry are more generally applicable"* [Silverman, 1993]. External validity is sometimes also referred to as generalisability: *"A concern … in the design of research is the extent to which research results are generalisable, that is findings may be equally applicable to other research settings, such as other organisations."* [Saunders et al., 2000].

Reliability *"refers to the degree of consistency with which instances are assigned to the same category by different observers or the same observer on different occasions"*. [Silverman, 2000] Reliability can be assessed by posing the following questions [Easterby-Smith et al., 1991] *"Will the measure yield the same results on different occasions?"* and *"Will similar observations be made by different researchers on different occasions?"*

One general way of dealing with the quality tests above is making use of triangulation, which *"refers to the use of different data collection methods within one study in order to ensure that the data are telling you what you think they are telling you"* [Saunders et al., 2000]. A combined research method provides a rather flexible structure to permit changes of research emphasis as the research progresses. The main advantage of a multi-method approach is

that different methods can be used for different purposes, like for instance one may conduct interviews before developing a survey in order to ensure that the important issues are addressed. In more detail, following concrete tactics have been used to aim for these quality criteria [based on Yin, 1994; Eisenhardt, 1989; Wielemaker, 2003].

Tests	Case study tactic
Construct validity	• Framework as a priori specification of constructs [Eisenhardt, 1989] • Multiple sources of evidence: interviews, meetings, workshops, documentary and archive data [Yin, 1994] • Triangulation through multiple informants on a single case [Pettigrew, 1988] • Key informants review draft case study report [Yin, 1994] • Separate and then joint analysis by different researchers [Eisenhardt, 1989] • Email / interviews for presenting findings to all firms involved.
Internal validity	• Pattern matching of CSS both within and across firms [Yin, 1994, Eisenhardt, 1989] • Explanation of different CSS patterns found. [Yin, 1994]
External validity	• Multiple cases: twelve case studies [Leonard-Barton, 1990; Eisenhardt, 1989] • Literal replication of certain findings within and across firms [Yin, 1994; Eisenhardt, 1989] • Theoretical replication of certain findings attributed to different sets of organisational conditions across the firms. [Yin, 1994, Eisenhardt, 1989]
Reliability	• Use of case study protocol for investigating corporate strategy systems and KIE contexts [Yin, 1994] • The existence of a case study database containing: protocol, documents, notes, interviews, slides and reports, analysis tables. [Yin, 1994]

Table 4-4: Case study tactics for four design tests [Wielemaker, 2003, p. 86; Yin, 1994, p. 33]

These four tests of quality are generally valid for scientific research and have been internalised into the research process. In addition, there are two additional checks for this research which base directly on the specifics of this explorative, theory formulating study on configurations. Regarding explorative case study research that is conducted to develop theory, Eisenhardt [1989, p. 532] states that *"framebreaking insights, the tests of good theory (e.g. parsimony, logical coherence), and convincing grounding in the evidence are the key criteria for evaluating this type of research"*. The end result of this research, i.e. the emerging hypothesis should therefore be [Eisenhardt, p. 548]:

• Good theory: *"assessment turns on whether the concepts, framework, or propositions that emerge from the process are 'good theory'"*
• Empirically grounded: *"strength also depends upon empirical issues: strength of method and the evidence grounding the theory"*
• New insights: *"finally, strong theory-building research should result in new insights"*.

Regarding the specifics of studies for developing conceptual configurations, according to Miller [1996], the end result (successful conceptual configurations) has to possess at least the following three important features:

• The various strategy types are well informed by theory;
• They invoke contrasts that facilitate empirical progress, that is, they resolve persistent debates and conflicts;
• The variables used to describe each type are shown to cohere in thematic and interesting ways - ways that have important conceptual, evolutionary or normative implications.

"Regarding the first requirement, the review and classification of strategy types should have strong support from theories in strategic management. In other words, each type should have a long respectable history of academic work that has developed concepts and evidence. Second, perhaps more intriguingly, the types should point to important lessons for practising managers and for those who teach them. Finally, typologies should illuminate empirical work too." [Elfring and Volberda, 2001] The developed configurations will have to be checked against these three features.

To summarise this chapter, we have argued that an explorative research strategy using multiple case studies is most appropriate for answering the research question. As a result of the starting assumption, this research is inspired by the configuration school of strategy research and makes use of its methodological guidelines for constructing configurations. In order to conduct explorative multiple case studies, we have presented the iterative process that is followed and the various data collection instruments and cross case analysis measures that are taken. The resulting hypothesis will not only have to be evaluated against the four general quality tests for scientific research, but also against the specific tests for explorative research and conceptual configurations studies. The match of the resulting theory against these tests will be done in chapter 8.

We have thus a clear methodology that guides us step for step through the construction of configurations of corporate strategy systems in knowledge-intensive enterprises. We can now move on to the following chapter in order to investigate the case studies.

5 Case studies

This chapter describes the corporate strategy system and context of the following case study enterprises:

- *CreaStudio*: small professional services firm active in the fields of design, communication and product development.
- *InnoService*: small and fast growing professional services firm active in the fields of innovation management consultancy.
- *AdaptIT.com*: small ICT services provider in the field of e-business.
- *VERYSoft*: growing small and medium sized enterprise (SME) that is active in the field of developing, producing and selling human capital software.
- *SolveTix*: growing SME developing and producing telecommunications equipment and services.
- *Linux:* globally dispersed virtual community that develops open source software.
- *TelEquip*: mature and large enterprise that develops and produces telecommunications equipment and is active in various fields of business.
- *MachOne*: SME manufacturer of unique fabricate, technology advanced equipment as supply for automotive industry.
- *CoolSystem*: large and mature supplier of technology components and modular subsystems for the automotive industry.
- *InnoMobile*: global, large automotive OEM (original equipment manufacturer).
- *DriveSupply*: global, large developer and producer of subsystems for the automotive industry.
- *GlobalCar*: global, large automotive OEM.

As described in the sampling strategy in the previous chapter, the first two case studies (CreaStudio and InnoService) are professional service enterprises and represent the category of talent-intensive KIE. Five case studies (AdaptIT.com, VERYSoft, SolveTix, Linux and TelEquip) are enterprises from the information and communication technologies industry and represent the category of information-intensive KIE. Five case studies (MachOne, CoolSystem, InnoMobile, DriveSupply and GlobalCar) are enterprises from the automotive industry and represent the category of technology-intensive KIE. Note that apart from Linux, all cases are using fictive names. The logic of the case study description is as follows: a short introduction to the company; followed by a description of the external environment and the internal environment; and then the description of the corporate strategy system.

5.1 Case study: CreaStudio

CreaStudio (fictive name) is an innovation consultancy of around 20 people with special focus on product design. Its core business is focussed on *corporate retail* (design of elements and atmosphere), *product development* (new products, drawings and sketches, shape of products and functionalities, engineering point of view and design of the product

itself) and *communication* (corporate identity, packaging of products and multimedia). CreaStudio offers individualised services to customers in a variety of sectors, mainly in retail & consumer goods and production companies.

5.1.1   Context

This section describes the external and internal environment of CreaStudio.

External environment

The market for product development and design consulting in the home country of CreaStudio is a rather young and fast growing market. CreaStudio is offering individualised services in this field to customers in a variety of sectors. CreaStudio is mainly serving small to medium sized, regionally operating enterprises in its region. The current customers can best be described as early adopters, as can be expected in a market being in an early stage of development. However, CreaStudio is refocusing its orientation and moving more towards those market segments where customers can be defined as pioneers, i.e. highly innovative producers of retail and manufactured goods. This can be explained by the move into product innovation consulting, which is an even younger market than product design services. The market is changing quickly with shifting customer needs and new competitors appearing frequently on the scene. The changes in the market situation, customers' demand and competitors' movement are therefore perceived as important forces by the company management.

Apart from the strong relationships with customers, the company relies more and more on partnerships especially in the area of knowledge creation. Management of innovation techniques and processes is an area of knowledge that is developing rapidly. CreaStudio is therefore involved in various regional and international collaborative relationships with universities, research institutes and other consultancies active in the field of innovation management. The intention is to intensify the network of collaboration, especially with international contacts, for example with the aim: *"to orient the company more internationally, to share knowledge with external partners, to develop strategic alliances and to collaborate with external partners on a project level."*

Internal environment

Although the enterprise has existed for a longer period of time, the company actually behaves more like a start up company. In the first years of existence it has had only a small number of employees focussing mainly on design. CreaStudio used to be one of many typical design studios in its region. Then over a period of five years (1998-2002) it grew, by almost 45% per year (on average) in terms of employees. There are similar figures for turnover and numbers of projects and customers. This growth has come mainly through the offering of new services (product innovation management) as well as the general economic boom in the region.

Thus CreaStudio is confronted with a rapid internal change process. The company grows very fast and due to this fact, the company feels a strong need to define the whole organisation more systematically and more deliberately, e.g. the internal organisational structure has to be adapted to this change. Currently, a number of activities are under way to provide more structure to the mainly informal organisation. The main units of activity are projects with clients. With the growing amount of projects, CreaStudio is also intent on more

effectively and efficiently managing these projects, for example through such issues as *"evaluation of results, monitoring quality of results, analysing projects, learning from mistakes during projects, effective project resource management, multi-project management, tools and methods for effective project work, capturing lessons learned."*

As in any consulting service, the enterprise lives by the capabilities of its employees, i.e. consultants, designers and project managers. CreaStudio' people are highly motivated to learn and a strong willingness to be flexible and (mentally) mobile is visible. Knowledge within CreaStudio is crucial. Although there are many activities in this area, extensive knowledge sharing and the re-use of existing knowledge is urgently required. With the growing amount of employees and capabilities, the need to manage internal and external knowledge more efficiently also arises, for example through such actions as *"knowledge mapping, knowledge sharing, transforming implicit into explicit knowledge, transparent information and knowledge flows, how to create internal knowledge, how to use external knowledge, increase re-use of knowledge."*

In this entrepreneurial company, which is in a process of defining itself, the need for more open communication and collaboration is felt, for example through more *"intra-organisational collaboration, shared project work, communication inside of the company, project progress evaluation and monitoring, avoidance of double work."* This goes hand in hand with an afore mentioned intention towards more increasing networking and partnerships.

Through all these change processes in the internal environment, the enterprise aims to position itself more clearly in the quickly expanding (regional) markets of innovation management consulting. Establishing a distinctive position in the regional market starts by creating a clear company profile and a more formal definition of the enterprise itself (e.g. structure, project management skills, knowledge sharing and development). CreaStudio is pursuing growth in the newly entered fields of innovation management consulting and also aims for entering other regional markets.

5.1.2   Corporate strategy system

In the context of the rapidly changing external and internal environment, the entrepreneur is focussed on defining the company mission as well as facilitating the dialogue with all employees in establishing it. The longer term intent of CreaStudio is therefore to be able to *"better meet the industrial & consumer clients' needs, to organise better internal structures and information, to offer the customers better services and to extend the existing business and grow in an appropriate way"*. Next to this, CreaStudio has a strong need to formulate and communicate a consistent strategy, both internally and externally. The employees require a clear direction where the business will go and what implications this will have for them. As a result of the change processes, new tasks and activities for the employees will appear and daily work will change. Transparency in all areas is therefore required and the entrepreneur has a task in gathering the employees behind a shared vision of the future.

In the current situation, CreaStudio's vision for the future exists mainly inside the head of the entrepreneur. There is a need especially from the employees, to build up a common strategy together in order to share this sense of direction for the employees of CreaStudio. Strategies are not communicated in an explicit manner internally and externally.

'Strategy' lives more as an emergent pattern of decisions taken by the management and all consultants during everyday activities (client projects). Especially the developments of customers and broader markets to a large extent shape the direction of these actions.

The boundaries of a corporate strategy system are hard to identify in CreaStudio and this is because it has no defined corporate plan or identified corporate planning activities. The corporate strategy system in this case is the entrepreneur ('top management') and the project managers ('middle management'). The company is guided by the decisions that they take in the context of customer and project dynamics. The corporate strategy as such can be found in the pattern of decisions that emerges from this business dynamics. Even though CreaStudio has not formalised the corporate strategy function and has no explicitly formulated corporate strategy, many ideas exist about the future development options for the company. The combination of a long term vision and free room to make decisions unleashes creativity and makes the enterprise flexible to deal with changes and opportunities.

CreaStudio would like first of all to define its mission of the enterprise explicitly and therefore *"establish coherence between: who are we? What do we do? And what do we want to do in the future"*. Especially the strategic dialogue and communication about the purpose of CreaStudio is important for a sense of common direction among the employees. Another (longer) term aim is to grow the company through internationalisation, by *"establish(ing) companies in key-countries (Germany, England)"*.

As a design studio transforming into a management consultant in the innovation field, one thing that is critical to the business is a good and close relationship with customers. CreaStudio has created internal expert teams that focus on certain key topics for their customers. Adapting to clients´ needs is considered the critical success factor. The aim of the company is to be a (regional) *"leader in innovation consultancy, based on own methods and capability to produce products"*.

Much of the relations with customers are dealt with on a project by project basis. CreaStudio is clearly in the process of positioning itself in the market. Some wishes for the future are tending towards more structured and formal market positioning: CreaStudio feels the need *"to define A,B,C clients"*, *"to define position of CreaStudio"*, *"to develop a structured marketing department where all the projects should be analysed and evaluated"* and *"to position and let the clients know our core products, services"*.

Currently CreaStudio does not *"analyse the market, look for a specific strategy, implement the strategy, control the way of acting"* in a systematic way. All of this happens informally and partly unintentionally.

CreaStudio competitive advantage is based directly on the knowledge of its employees. Sharing knowledge and the *"transfer of tacit knowledge into explicit knowledge"* is critical. In this regard one participant states that there is a *"need to organise structure for communication, bring organisational knowledge through the company"*. Moreover, CreaStudio would like to increase the sales of new knowledge that is already practically approved (in satellite / pioneer companies).

CreaStudio does not have formal strategic planning processes. The course of action is shaped through the dynamics of the entrepreneur, the main customers, the markets & competitors as well as the creativity of consultants and their specific skills and experience. The establishment and continuous dialogue about a common sense of direction is stressed as a prime topic for a small innovation consultant: *"we would need to analyse the situation, share opinions and come together to find answers"*. On the on hand, participants underline the demand for more clarity about the future vision, more structure and more formalisation of processes. On the other hand, the enterprise is very agile and creative due to the informal character of its operations.

In terms of people involvement, one could say that the whole company is involved in the corporate strategy formation of CreaStudio. The long term future vision is existent only implicitly in the head of the entrepreneur. However, although not formulated explicitly, the strategy lives by the actions of the consultants and especially their relationships with CreaStudio' clients.

In terms of planning process and tool usage, CreaStudio is currently in the process of formalising its activities and creating a toolbox that is considered 'strategic' (as it will directly impact the main work of CreaStudio consultants and clients), such as: *"Creating tools and methods to stimulate communication; Create common databases: ideas, feedback; Having brainstorms, define the different ways of acting, structure all the ideas; Create networks by understanding customers as pilot customers; Developing solutions with customers not only dossiers but solutions that are implemented put myself in the situation of the client."*

This demonstrates that just like the enterprise is in a process of forming itself, also the general management processes and corporate strategy system are in a process of being formed and shaped. The current CSS situation is that there is much free room for informal decision making during day to day operations. This stimulates creativity within the projects and an overall flexibility of the enterprise. As a longer term compass providing direction, CreaStudio is mainly guided by an entrepreneurial vision and leadership.

5.2   Case study: InnoService

InnoService (fictive name) is a professional services firm. It has been founded more than twenty years ago as a 2 person industrial design studio. Over a period of 5 years (1998-2002) InnoService has quickly grown from 25 employees to almost 60 employees, going through a dynamic development process, constantly redefining itself. It has now turned into a team of 60 professionals offering product innovation consulting, operating in various European countries: *"InnoService is a professional services firm that provides competitive advantages to its clients through product innovation, development and optimisation."* InnoService refers to itself as *"Product/service strategists"*.

5.2.1   Context

The following describes the external and internal environment of InnoService.

External environment

InnoService offers individual services of product innovation, development and optimisation to customers in four main types of sectors: consumer / industrial goods; health care; distribution / FMCG; and transport. The external context reality of InnoService is therefore to a large extent shaped by the developments of its customers in these fields.

Some of the key trends that participants describe are:

- *Globalisation*: the customer markets are increasingly determined by globally active enterprises. They are requesting global contractors, also in services.
- *Time*: the factor time is considered very important in the product innovation business: *"If I miss an idea, the time is now. All commercial methods that are available for product development take too long. This does not match with the problem that there is no more time to market."*

- *Adaptation to clients*: InnoService, but also its clients are adapting constantly to their clients. This dynamic impacts the perception of the external context.

These and other forces make participants feel aware of the constant dynamics in their context. The CEO describes this as follows: *"Another issue will be to make better use of the world. In the next 5 years, all the markets will be in change. In design the change levels can be OK, but in services for companies this situation will be completely different and comparable to the rate of change as the internet. I estimate that in 5 years, 80% of current companies are gone or are mutated."*

InnoService started as an industrial design studio and still has an extensive amount of work in this field. This market is considered to be in the 'maturity stage', implying that competition is dominating in this stage. There are more and more design studios that are increasingly competing mainly on price. In contrast, InnoService is developing itself more towards higher value added consulting.
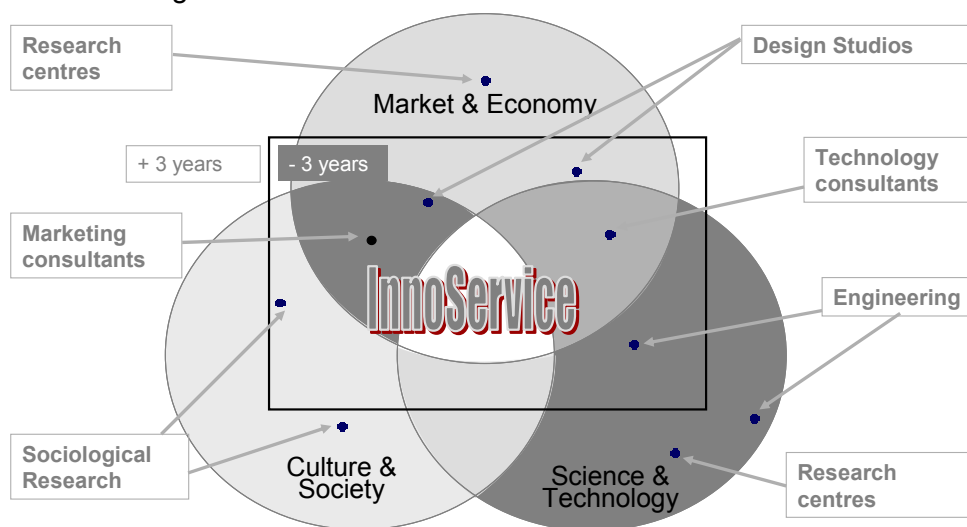
Figure 5-1: Competitive situation of InnoService

In this situation, as depicted above, there are a number of competitor groups. InnoService is facing competition from design studios in its original markets and competition from various groups (e.g. technology and business consultants) in its consulting markets. It is assumed that within the next 3-5 years the main market of InnoService will be the product innovation consulting market that is currently in its 'growth stage'. The heterogeneity of competitive forces is considered to be rather high.

Like in the case of CreaStudio, the main stakeholders of InnoService are its employees and its customers. The enterprise is in a process of repositioning itself orienting towards different groups of customers. Customers for product innovation are typically bigger, more global oriented and more proactive than the customer groups for product design & engineering services: *"InnoService will address different clients, bigger ones; must have a complete and competitive offering"*. This market for product innovation services seems itself to be in its earlier stages of development. Therefore, InnoService does not have a clearly distinguished position in this market. Accordingly, the level of power that InnoService exerts over the chain is limited.

Apart from customers and employees, partners play a role as stakeholders especially in developing new competencies and delivering services to clients: *"Partners and networking will help to deliver better, if there is a good network of providers. In this regard, establishing a network of knowledge partners (universities, institutions, etc.) is also an issue."*

Internal environment

InnoService is a company that has gone through numerous changes. On the one hand, the changes are triggered from inside the company with the objective to be proactive to expected market trends and environment changes. At the same time the environment of InnoService has created opportunities that have also led to internal change at InnoService. The changes InnoService went through have been a combination of a future vision of the general manager, who is also the founder, of InnoService and of trends in the environment.

Within the corporate lifecycle, InnoService is perceived to be at the beginning of the growth stage. Over a period of five years, the enterprise has already seen an average growth rate in turnover and employees of around 25% annually. The growth in profitability over the same period has been significantly lower (on average 4% annually). This can be considered typical for a growing company that is investing in further growth.

There are clear signals that the company is in a transformation phase, from the entrepreneurial early phases of its corporate lifecycle to a growing enterprise, which is starting to pay more attention to structure and systems. The enterprise has recently received external capital and new management. The new CEO points out the challenges of managing this transformation: *"there are many things to fix, in order to make the machine work more smoothly. Take the metaphor of the automobile. If you have the chassis, for the car you are running, it might be OK for a couple of years ago. There is now a need to change chassis, not the car. But, the car of tomorrow will be different. The chassis will need to be build for both today and tomorrow. It will need investment and plans. The target growth of InnoService is 50%. This new chassis has to do a lot with internal opportunities and procedures. It has to do with more people and with more complex projects."*

The main resources of InnoService are its people and the knowledge they have. The consulting staff of InnoService is multidisciplinary and from different cultural backgrounds. This is important in order to be globally oriented and offer creative, complex problem solving (product innovation). Apart from its human capital, crucial other resources are its financial resources and customer capital. This is reflected in rising importance of resources such as e.g. brand, image and relations. The main units of activity in InnoService are its client projects. Furthermore, as depicted in the following figure, there are five so called 'knowledge areas': Optimization; Applied innovation; Product development; Sustainability; Project management. The 'middle management' inside InnoService is represented by these five area managers, as well as - in an extended circle - by project managers.

Each of these areas represents a field of competence that is relevant for product innovation. Projects might take place within one knowledge area, but more and more are transcending these five areas. The knowledge areas can actually be seen as competencies that are required along the product development chain (of the customer): it starts with innovation, then the actual product development, its optimization, etc. There is an effort to integrate these five areas in order to be able to offer flexible and profitable projects: *"At the moment, within InnoService there are 5 Knowledge Areas. An initial step will be to integrate all these areas. Area managers must make an effort in integrating these five areas."* In this way, InnoService is a single business company (in the field of product development consulting).
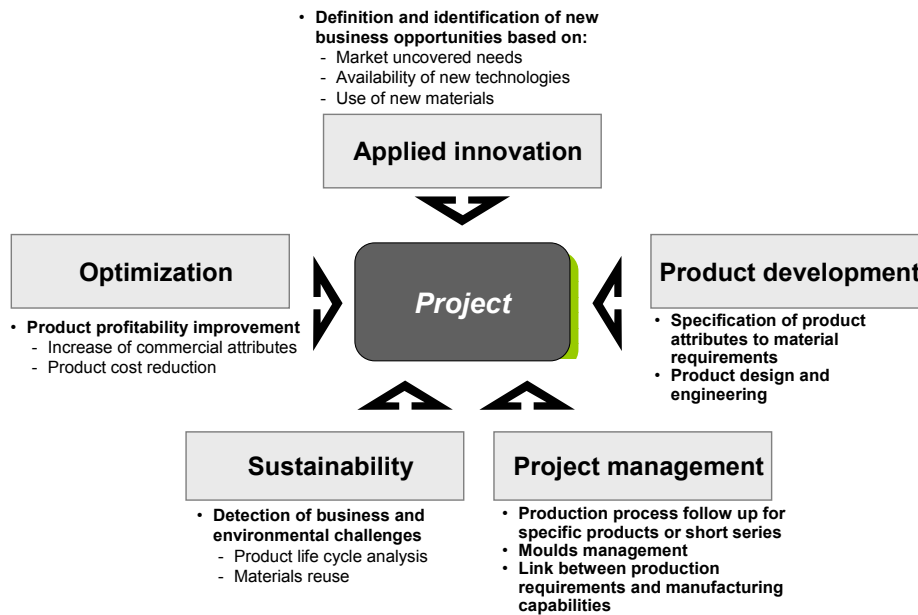
Figure 5-2: InnoService units of activity – projects & 'knowledge areas'

The collaboration between the five main areas is becoming increasingly important, as more and more people from different areas are working together on client projects. As said, these five areas are being more strongly integrated for the future. Moreover, between the projects there is a natural, rather informal sharing of experience and knowledge. There is a clear intention to make this knowledge sharing between projects more systematically, for example through: *"developing a global and local network"*; *"multi knowledge to create in knowledge"*; *"constantly investing in knowledge"*; and *"personal growth"*. Knowledge sharing and stronger collaboration across projects is not seen as a 'nice to have', but as a crucial mechanism for enabling growth and becoming more efficient: *"(growth & internationalisation) requires an ability to replicate, into different locations. One mechanism for this is communication and knowledge sharing in order to make knowledge available to all people. In this way, work will take less time for the same activities."*

The 'corporate centre', which in the InnoService case is its management team, has a strong influence on the corporate development and pushing these growth processes. Moreover, they are also strongly involved in some crucial operative activities, such as acquisition of big projects, etc. InnoService has an ambitious team. It is a growing company and the intention is to use returns of this growth to fund further growth: *"The company needs to grow, it needs to be profitable in order to fund further growth … companies like InnoService need growth, if they do not grow they will die."*

The preferred model of growth is into nearby businesses, through organic growth. There is a number of key elements foreseen in order to get more organic growth:

- New people: *"finding people, hiring people, etc."* with the necessary required skills fitting the vision of the company, being able to interact with (top) managers of clients;
- More clients: *"offer to the right clients with the right services"*;
- Flexibility in services: *"service lines that need to be dynamic"*;
- Internationalization: *"Also internationalization, going global is included. Moreover, the fees need to be appropriate."*

At this point in time, it is considered to be more a matter of execution than planning (for growth): *"the execution is more important than planning."*

InnoService has traditionally been very responsive especially with regard to attending to changing customer demand. There is an awareness that the services should continually be adapted to the market forces in order to remain competitive: *"a success factor is to adapt the offer to the markets, as the offer can not be static"*. The shift towards more value adding consulting services can to some extent also be explained from this responsive attitude. However, it seems to be more than just responsiveness; it is also an indication of a more proactive attitude of management. There is a clear entrepreneurial vision of the future and a strong ambition to transform the enterprise into a 'product strategists' consultancy.

5.2.2   Corporate strategy system

The mission of InnoService is *"to provide our clients with competitive advantages for their products and their changing environments"*. Another way of seeing this is that the purpose of InnoService lies in continuously matching the 'right' clients with the 'right' employees. The vision is *"to be product strategists (McKinsey of the products); to be European leaders; and to be a reference company for product strategists"*. The corporate strategy at InnoService is currently not made explicit, but exists as a mental model. However, the management team is in the process of formulating a 'business plan', which is focussed on making the transformation towards 'product strategists' more detailed: *"At the moment in InnoService, the strategy is a mental model. It evolves from discussions between partners, area managers and the CEO. But, currently InnoService is working on a business plan. The idea is to make all foreseen changes fixed in a business plan, but still remain very flexibly."*

So far, 'planning' inside InnoService has been mostly informal and driven by the founder and entrepreneur taking decisions together with his management team. There have been no formal organisational procedures. The timeframe of strategy formation (modifying the mental model) so far has been around every 3 years. After developing the corporate plan, the intention is to institutionalise planning procedures which take place every year.

In most of the activities, the short term view has dominated. The longer term view has mainly resided with the founding entrepreneur. In the corporate plan that is being established the time horizon will be somewhere between 5 to 3 years.

The corporate strategy, in the form of the mental model has been purely qualitative and also strategic. However, many strategic decisions that influence corporate development have been taken in the operational dynamics of projects and serving customers. The foreseen corporate plan is going to include a financial and quantitative focus as well. With new management and after establishing an initial corporate plan, the intention is to install some procedures for planning.

Accordingly, there is no formal organisation of the corporate strategy system. The main decisions are taken by the entrepreneur and his management team. It is expected that this will change in short term, with new management and the implementation of more systematic management procedures and systems.

The processes for taking decisions inside InnoService do not follow any predetermined format or scheme. Important (tactical) decisions are taken in the dynamics of operations, and the entrepreneur and his management team focus on the longer term direction of the enterprise and take action (such as e.g. taking investors on board) in this direction. The elaboration of the strategy, as a mental model, has been inspired by the entrepreneur and has emerged from the dialogue with his team, area managers and to some extent (senior) project managers. However, the key decisions (such as e.g. going for external funding) are taken by the entrepreneur.

Corporate strategy system functions

The 'corporate strategy system' in this case consists of the entrepreneur and his management team developing a longer term vision of the enterprise, establishing its purpose and taking decisions. The main role of the CSS so far has therefore been to integrate the whole enterprise behind the new vision of a company of 'product strategists'. The establishment of purpose has included numerous discussions and 'integrative' processes: *"strategy … evolves from discussions between partners, area managers and the CEO"*. But, the future vision has become clear (European leaders in product innovation) and the main role of the CSS can now shift towards enabling the growth and development towards this vision: *"the business model is becoming clearer now, but in order to grow there will also need to be a new structure."*

The corporate strategy can in this case be considered as the result of a pattern of decisions, which are taken on: selection of the competitive environment; definition of goals and the most desirable competitive position; selection of projects and business opportunities; definition of growth and size targets; organisational structure and responsibilities; and internal alignment of activities and alignment with other business units. There are no formal procedures for deciding about these issues. However, they are addressed in entrepreneurial decision making and in management team discussions.

At the start of a (new) growth phase, the leveraging of resources is quickly becoming a key function of the corporate strategy system: *"The preferred mode of growth is to hire people from outside, either as individuals or as groups."* More and more attention is going to be paid to advancing corporate resources quickly. This relates on the one hand to developing customer relations and on the other to advancing people and their knowledge.

Before being able to advance on a growth path (by leveraging resources), the key function of the CSS so far has been to establish a common sense of meaning and direction for the 'new' InnoService: *"(we need to) define a InnoService model in order to be able to expand the company"*. This development of a purpose has far reaching implications, it is about establishing what is InnoService and where it is going – it is required to: *"Define the essentials of InnoService and do so in order to expand the company internationally being able to implement the InnoService's concept in new markets. Essential resources, essential knowledge, essential competences … to develop the company"*.

As mentioned, the establishment of a common purpose for the enterprise has taken some time, but the model is becoming very clear. The purpose of the enterprise is understood in the new field of product innovation consulting, which according to the founder ties in with fundamental changes in the market: *"the problems related to product/markets are the same as publicity (note: advertisement and marketing agencies), 5 years ago. One has to be very creative, but the management of meaning comes first. The basis for InnoService is the same."*

This establishment of a common purpose has been guided by an entrepreneurial vision of the future, inspired by opportunities in a changing environment and takes place through numerous internal discussions and debates among the management team and involving all employees. The alignment around a shared meaning and sense of direction generates significant levels of energy in the enterprise, as some participants state: *"Personally producing a benefit"*; *"Everyone wins: profits, and at a personal level"*; *"Personal Motivation"*; and *"Intuition-Smell"*.

Another function of the CSS in InnoService lies in selection or matching of projects (main units of activity) and customer portfolios. So far this matching function has been fulfilled in a 'natural', organic manner. Based on customer demand and requests, projects have been installed and naturally selected (if a customer accepts an offer, the project is conducted, otherwise not). The intention is to have more institutionalised decisions about selecting the type of customers and matching them with the 'new' value proposition. These kinds of decisions will take place in the frame of business plan establishment: "*In the business plan, all clients portfolio will be reconfigured into a new position. There needs to be a strong internal communication - the need is now for this*".

One of the key outcomes of the establishment of the purpose of the enterprise is that a repositioning needs to take place: new types of customers will be addressed, different profiles of employees will be developed, new competitors will be faced, new funding will be required for funding growth, etc. etc.: *"The strategy of InnoService is to put in the management board of clients our passion for InnoService for all aspects related to products. This is unique, because the product is not the vision of other (traditional management) consultants. This is also the reason for InnoService to open up for new partners and for repositioning itself."* The envisioned position of InnoService is focussed on offering a services portfolio, which has to be seen as a "bridge" between the traditional management consultancy companies and the "pure" design agencies.

One big challenge, in this context, is the clear differentiation against other players within the served market segments as well as the communication of such to clients and partners. The main units of activity are the client projects and the five knowledge areas. Actually, the main mechanisms for coordinating the projects are the knowledge areas. The coordination exists first of all in the allocation of people and their time to projects. Moreover, there is coordination among project managers in terms of (informal) knowledge sharing. This coordination of projects is not only done within each knowledge area, but increasingly overlaps other areas. The coordination of the knowledge areas is one of the ongoing management issues. The area managers are part of the management team that is involved in many of the crucial decisions that are made. Through regular management meetings, as well as during daily operations, an emergent form of coordination between areas occurs.

InnoService is open to external signals. There are different mechanisms for picking up signals and dealing with them in terms of change. Probably the most established mechanism relates to picking up customer demands and changes in their needs. Also, the broader trends of the professional services markets are regularly (but not preformatted) discussed. Also, there is awareness for latest developments in the fields of knowledge that underpin InnoService's services, such as product development. One example is the establishment of the area of 'sustainability', which has been included as a service based on the increasing awareness and requests of client enterprises for environmental and lifecycle (e.g. recycling) aspects in developing products.

Corporate strategy system processes

The focal point in strategy development has been the elaborate process of establishing a new purpose, with its according mission, vision and new positioning in the markets. The processes related to this are described as 'entrepreneurial', which implies a semi-conscious process. To a large extent the purpose build on an entrepreneurial vision, but has certainly evolved through numerous internal conflicts and debates among senior and junior managers

and employees. The determination of a course of action related to more tactical decisions is described as 'adaptive', which refers to decisions that flow from previously made decisions.

As mentioned previously, for the first time the management team is formulating a detailed plan of business according to the new corporate model.

The processes related to strategy realisation are the key processes within InnoService: *"the main point is execution"*. The model of execution is described as 'collaborative', which implies involving management to get commitment from the start. This refers mainly to the collective involvement of various managers by the entrepreneur when making decisions. In future, the model is expected more to be one of 'change', which implies a stronger focus on the transformation of organisational structure and systems.

There is a rather rudimentary measurement of performance, mainly project related. Apart from the overall enterprise financial reporting, progress on projects is tracked related to person hours spend, etc. There is no detailed comparison of budgeted costs of a project and revenues. It is foreseen, as part of rising professionalism and more systematic management procedures to keep more rigid control of profitability on each project and for each knowledge area: *"there needs to be more control ... It will be a matter of regularly checking progress, in order to be using energy for the right things."*

There is an extremely strong tie between strategy formation and realisation. Or, put differently, strategy exists mainly as a pattern of decisions taken during the day to day operations. In this way, strategy formation and realisation are basically the same. The reflective, longer term element of strategising lies basically with the entrepreneur and discussions with the team: *"(the entrepreneur) is setting out the big lines."* As the strategy formation and realisation processes are strongly interlinked, the strength of adapting quickly is remarkable.

People involved in the corporate strategy system

The main people involved within the corporate strategy system are the entrepreneur and his management team. Also area managers and senior project managers are involved in decision making. Moreover, there is an open and informal culture allowing all employees to bring in their ideas and suggestions. It is expected that in the future top management will take more control over planning, as there will be more formalised procedures and organisational arrangements for the strategic planning process.

The entrepreneur and his team of the enterprise take charge of making strategic decisions and elaborating a future vision of the enterprise. However, most of management attention is occupied in daily operations and the client project dynamics, as well as project acquisition.

There are no extensive planning capabilities installed in the enterprise. Most of the decision making and other strategy processes are rather informal. New management will focus on more structure and systems in place for a more regular and informed planning. Additional planning capabilities have been installed through new management, which *"will be quickly implementing different ways in doing things, especially related to management tools. Typically for a small growing firm, there is a lack of information for managing the firm. This is also a key priority."*

5.3   Case study: AdaptIT.com

AdaptIT.com (fictive name) is a service provider in the ICT sector with around 30 people (down from 60 just two years earlier, 2000). More specifically, its business can be referred to as an e-business and IT services agency. Since its birth, the enterprise has gone through phases of consulting, web services and integration business. The strategic focus of AdaptIT.com is to act as a systems integrator in five closely related e-business areas: content distribution; e-commerce; enterprise information portal; management services; knowledge management. AdaptIT.com aims to provide *"innovative online solutions for customer problems"*.

5.3.1   Context

This section describes the external and internal environment of AdaptIT.com.

External environment

The direct external environment of AdaptIT.com follows the drastic movements of the ICT industry. In the IT business, there have been many ups, like e.g. the internet, euro introduction and the Y2K. However, the IT industry is down since the beginning of this millennium. According to one participant it is the first real serious down in the industry's history. All players in the IT markets are confronted with the same overall malaise. The heterogeneity of forces for change is therefore overall rather low. In other words, although the external environment is dynamic and volatile, the forces behind these changes are rather homogenous. Before the industry dip started in 2001, the general IT industry has been in a long and strong growth phase of over a decade. This is reflected by the turnover and market potential increasing quite drastically. Also competition has started to grow stronger and stronger. This competitive intensity has increased strongly with a similar amount of players fighting for a much smaller market.

AdaptIT.com is active in five strongly related areas of activity. The dominant behaviour of customers in these sectors can be described as 'early followers', which is typical for a market within the growth stage. However, AdaptIT.com is refocusing more towards those market segments, where customers can be defined as 'early adopters'. AdaptIT.com intends to shift in the coming years towards entering the market at the early growth stages (and moving out before markets turn too stable). As any service provider, the company has strong ties with its customers. This is even more so due to the 'systems integrator' role, which means AdaptIT.com is 'the face to the customer' in front of a larger chain of (technology) suppliers.

In line with this model, AdaptIT.com's current relationships with suppliers are strong and are expected to become even stronger in the near future. Current relationships are typically 'long-term relationships', as well as some 'vertical integration'. However, within the coming years AdaptIT.com intends to increase the number of 'strategic alliances' and turn more into a 'network organisation'.

AdaptIT.com is one of the earlier e-business agencies in its home country and as such has some regional recognition in the market, especially with the customers and partners that it has dealt with, which are sometimes big corporates (e.g. AdaptIT.com has a strategic partnership with its supplier Cisco). Also, due to its position as a systems integrator in the chain it has an important position in the relation with the customers. Still, this position seen in the global IT industry is rather small, as reflected also in the size of the enterprise.

Internal environment

AdaptIT.com is a provider of individual e-business services to customers in a number of technology-intensive areas. Since its birth in 1994, the enterprise has gone through phases of consulting (birth), web services (growth) and currently is in the 'integration business' (towards maturity). The advancement of the enterprise has come to an abrupt halt, mainly due to the IT market crash. Therefore, in the last two years there has been a strong negative growth in terms of employees. The rates for turnover and profitability show a similar dip. Still, when seen over a longer term period, there is a strong growth rate.

AdaptIT.com is a provider of integrated technological solutions to its customers. The orientation on customers is therefore predominant. As solutions are delivered in customer specific projects, the enterprise has very strong skills in managing projects and in getting (new) customers in their business. As the value add of AdaptIT.com comes from giving unique solutions to their customers with high level skilled competence people working in teams, it is crucial to continuously update the corporate knowledge and skills. One critical success factor of the enterprise is to find the right people and competencies to give a customised solution to a unique customer problem.
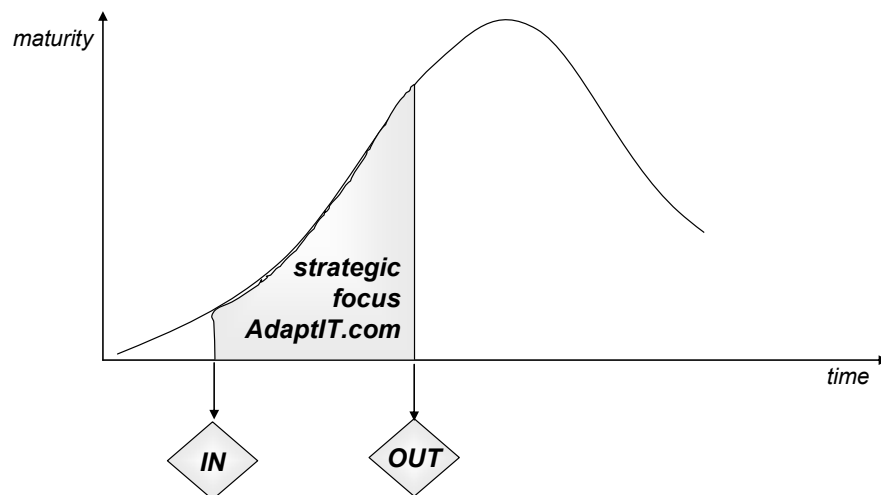
Figure 5-3: AdaptIT.com focusses on the start of a technology lifecycle

Knowledge therefore needs to include a deep understanding of the underlying information technology and the typical 'consulting' skill set of analysing business processes (of customers) and most importantly being able to combine both in unique projects.

As depicted in the figure above, AdaptIT.com is strategically orientated on areas of technology that have passed infancy problems, but are at or little before the starting point of strong adoption. This always involves 2 critical management decisions: when and on what kind of technology/product to invest and when to go out of the technology/product? Obviously, building up enough technical competence in a new field of technology/products asks for serious investments. The company specifically does not invest a huge effort in 'cutting edge' technologies, as it does not have the critical mass to invest the required effort in basic technological research. Apart from the crucial technical competencies, the corporate competencies for sales, branding and marketing are considered by the management team to be crucial, as are management and financial competencies.

AdaptIT.com is active in the following five e-business areas: content distribution; e-commerce; enterprise information portals; management services; and knowledge management. These areas involve somewhat different technologies, however the type of

activities that are conducted are quite similar. AdaptIT.com has a kind of matrix organisation, with a functional and a project oriented view. The main units of activity within the organisation are the projects it is offering with small teams dedicated to answer customers' need with personalised solutions in these five fields. But it has also functional units, such as e.g. marketing & sales, operations and finance.

In order to act as an overall solution provider, AdaptIT.com requires access to a lot of specialised partner networks, and therefore more and more value add is done within networks. One of the main points of attention is linked to (organisation, and especially) networking. This is maybe one of the main challenges AdaptIT.com has and will have to face during the coming years. Still, AdaptIT.com is a relatively small and integrated company, where the management team have strong influence on the corporate development process. Although, the main units of activity (customer projects) are conducted in the field with some separation between them, there is strong interchange between employees. Moreover, there are the functional units which increase the level of integration between the units.

The enterprise is strongly pursuing a development approach of discovering nearby market segments in e-business – continuously on the look out of the next upcoming technology. As there is currently mainly innovation that is new to the company, but not new to the market, the focus lies primarily on 'incremental innovation' or 'continuous improvement'. In order to become adaptive, focussing on more anticipative behaviour was acknowledged as being a key for future activities. AdaptIT.com is a strongly 'opportunistic' company, being very strong at responding to customers' needs elaborating projects and giving unique solutions to each customer. On the 'proactive' dimension, AdaptIT.com is considering setting up more partnerships and networking in order to become more proactive and anticipate new trends.

5.3.2   Corporate strategy system

The mission of the enterprise is to be a systems integrator in the e-business field. This implies that the primary intent of the enterprise lies in providing value to customers. Also the orientation on partners and suppliers is strong. In the future, the role of partners is expecting to increase.

The vision of AdaptIT.com is to become a *"top 5 KM service provider in our country within 5 years"* or in more general terms to *"provide innovative online solutions for customer problems"*. This relates to strategic objectives to focus on strong growth markets; to deliver customer focused value propositions; and therefore to optimise the risk.

The corporate strategy of AdaptIT.com is formulated every year, in the form of a 'business plan'. The business plan has a five year rolling horizon (for example '2002 – 2006'). The business plan is made operational in the shape of an operational plan, which is a plan of (strategic) activities. Each of the activities directly links to goals and concrete targets.

These targets are broken down on employee level. The compensation of each employee is partially dependent on the level of reaching initial targets. There is a visualisation tool used for keeping track and communicating of progress against these targets. The strategy is thus detailed on a single sheet action page, as the CEO mentions: *"you can only steer a company when it (strategy) fits on one page"*.

The operational plan and the level of progress are reviewed monthly. The monthly review also includes issues such as business development, situation on the markets and financial matters: *"the operational action plans are determining to a large extent the management agenda."*

Corporate strategy system processes

The corporate strategy system processes can best be characterised as a controlled thought process. The customers are in the centre of attention of this process. There is an annual planning process focussed on reviewing the five year business plan. This includes, for example a SWOT analysis and a competitive analysis. It is defined in a yearly strategy workshop(s). Crucial also in the plan are financial figures, such as e.g. sales forecasts. In management, there is a permanent focus on goals. This is important in all strategic activities, but especially in formulating the strategic plan and the operational action plan.

The strategic plan is primarily developed by the management team, which consists of three people. Concerning strategy implementation, it is not the case that the strategic plan is only a strategy 'in the desk'. The organisation should be flexible in dealing with the strategic plan, in its execution. The plan of activities is a great instrument for executing the strategic plan and still remaining flexible in its implementation. Also the monthly reviews of the action plans contribute to the flexibility.

The strategy development process mainly evolves around decisions taken in the corporate plan. Also, important decisions are taken during the regular management team meetings. Key decisions relate to identification of opportunities that are presenting themselves in the combination of new technology / (software) products areas and customer demands. When technology passed its infancy and significant customer demand is in place, the decision is taken to invest in this field. Investments mainly involve the build up of new competencies through schooling of people or possibly hiring new people. Also, the partnering is a solution to build up competence faster.

Although the business plan is considered important, the management team places much more value on aligning all employees around the derived targets and making the strategy work. In terms of time consumption of the management team, the estimated distribution is as follows: 10% of time for thinking and strategising; 90% for 'jumping', i.e. operational execution. However, still this 10% is important and it is not so self evident. It is especially crucial in order to filter out mistakes in direction and in order to take a look at the bigger picture.

The final strategic decisions, as well as the formulation of strategy, are taken by top management only. There are numerous ways to align the organisation with this strategy. Most important instrument involves the individual sessions with employees where their individual targets are established and agreed in accordance with the overall action plan. Moreover, the strategic plan is made transparent for all employees.

The strategic analysis for preparing the corporate plan is done through 2 or 3 workshops a year, primarily involving the management team. A same number of workshops are conducted for making the plan operational. Much attention is also paid to in depth product market analysis, based on gathered information, mainly in order to *"make sense out of noise"* (noise from technologies and markets). For all strategic analysis *"it is important to take a structured approach"*. Formally, a number of analyses are conducted such as e.g. SWOT analysis. Informally, such analyses as competitor analysis, customer demand and upcoming technologies are conducted. Overall, there seems to be a lot of flexibility in terms of topics to be addressed, timing and content of the strategic planning.

A strong connection between strategy formation and realisation processes is in place, because of various mechanisms. The key process (e.g. 90% of management time) inside AdaptIT.com's CSS is strategy realisation. It involves the communication of strategic

decisions to all employees, the agreement on targets, as well as the setting up and implementation of strategic projects. Strategic projects relate directly to decisions taken in the strategic plan. For example, when a decision is to enter a new product/market, a project is set up to develop the appropriate skills and knowledge in that field.

The strategic projects, which are the main vehicles for implementing the strategic plan, are regularly tracked in terms of target achievement within the management team follow up meetings. Also targets set for departments are evaluated in these meetings. Apart form the current financial reporting and occasional goal measurement, in future AdaptIT.com wants to install an information system for continuously keeping track of performance in a number of areas: *"to put measurement systems in place to monitor the achievements on implementing the common strategy and direction for all involved in AdaptIT.com, but with a focus on the management team"*.

Corporate strategy system functions

The main resources the company has are its people and their skills: *"in our operations, professional competence is the main factor of success"*. The professionals of AdaptIT.com are characterised by a continuous building up of technological knowledge. This expertise is combined and applied within the interaction with the customer. This is where the real value is created. Therefore, also the relationships with customers (image, relational value) and partners (technology access) are critical resources.

After choosing to follow a business & its technology (see below) or not, sufficient investments need to be made in quickly building up skills in that field in order to capitalise on the opportunities. Thus the corporate strategy system fulfils a key function in identifying the appropriate *resources* & skills per market, developing an according service market mix. It is important therefore to understand the customers and structure of decision makers per market.

More operationally, AdaptIT.com has in place a number of mechanisms for dealing with the continuous resource developments, such as personal CV's and knowledge profiling, knowledge sharing workshops, external courses, process documentation, etc. However, no systematic knowledge management effort is in place at the moment. Especially integrating the knowledge perspective in management planning & control is seen as an important issue. For the short term future, AdaptIT.com intends to develop networks for linking people so that tacit knowledge can be shared; and find people and build a team with the competencies necessary to give a complete solution to customers. A second priority lies in setting up an information system for people finding database (pointing to experts who can provide further advice); and a document system (providing background materials on a topic to people).

Moreover, AdaptIT.com wants to make this function more formalised, for example through: *"to do more basic technology scouting and watch market & customer trends and developments more closely, possibly in combination or parallel"*; *"to increase innovation potential of people and teams via creativity, out of the box thinking, idea searching, among others"*; *"to put into place a strategic approach to managing technologies, for example through technology roadmaps"*.

An important function of the corporate strategy system at AdaptIT.com lies in identifying opportunities and selecting product/market combinations. As indicated, the decision to enter or the move out of a certain product/technology is crucial. To exemplify the difficulty in this decision dynamics, see following figure of the CRM domain. Customer relationship

management software is technology for supporting marketing & sales processes. At a certain moment the technology is gaining interest from business. However, there are always two options of development. It could either be the highpoint already and move downwards afterwards (see option 1) or just be the beginning of something much bigger (see option 2).
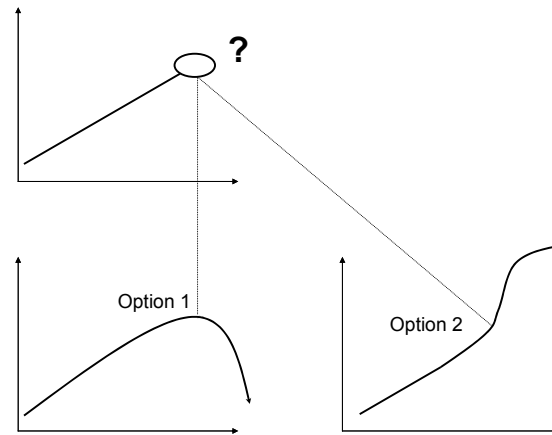
Figure 5-4: Example of product/technology lifecycle, CRM

The participants underline the difficulty of coping with the extremely short periods of opportunity opened in the IT industry, with its short cycles. According to one participant this is mainly because individual product markets never really get to a stage of saturation, due to quick technological advancements. Also customers focus on substitute investments, thus never the same product again: *"take the classical BCG matrix and the cash cows. In the IT markets, a cash cow phase may exist for probably not much longer than 6 to 12 months only. The next wave already demands capital intensive investments (R&D). It is extremely important to find the right wave."*

AdaptIT.com is now fulfilling the *activity selection* function through (rather informal) analysis of the different business opportunities and understanding of market clusters based on the 5 solution sets that the enterprise is capable of delivering. Also through active partnerships a 'natural' selection of business activities takes place. In future, the company wants to focus on more systematic handling of a portfolio of its key customers and partners.

As described, the markets are intensively competitive, especially since the beginning of the decade. There are numerous e-business agencies active in AdaptIT.com's markets. The competitive behaviour of AdaptIT.com can best be described as not aggressively seeking risky ventures, but at the same time not avoiding risks; trying to rationally balance risks and returns by following and improving technological advancements (possibly made by others).

AdaptIT.com is mainly trying to outperform its competitors by a combination of responding fast to changes (e.g. in customer demand) and by offering a differentiated offer, built around quality levels, costs versus flexibility and service. The CSS plays a function in this positioning process through a continuous (rather informal) analysis of the markets, customer demands and possibilities in terms of matching solutions. After evaluating the different opportunities and taking the competitive environment in to consideration, conscious decisions are taken for positioning in new or current market segments.

The main units of activity inside AdaptIT.com are projects and functional departments. The *coordination* of these units of activity is done by the management team through the process of goal alignment. Especially, the individual employee sessions to align the personal goals with overall purpose of the enterprise, are an important mechanism. Furthermore, through

the regular follow up management team meetings, the development of crucial strategic projects is tracked against the strategic targets and possible corrections are implemented. Also, each department manager has certain targets that are aligned to the corporate plan.

Apart from coordination of internal units of activity, more and more of value add depends on collaborative networks with external parties. In the future, the enterprise is looking to implement a more systematic monitoring and aligning of the network to the strategic plan: *"to identify, analyse and collaborate with different partners covering the anticipated value proposition of AdaptIT.com as an integrated solution provider"; "to monitor continuously the performance of the company's network and the individual partners on a strategic manner"; "to improve internal competencies and infrastructure for coping with the diverse aspects of collaboration with the different company stakeholders"; "to be able to follow up projects and possible customer contact after projects have officially finalised"*. This will make the coordination of units of activity within the whole network an increasingly important function for the CSS.

The AdaptIT.com team acknowledges the high turbulence of the markets, but so far there are no systematic processes in place that enable the structured anticipation of future trends. The sensing and responding to signals of change is done in an informal manner. Especially related to customer demands and technology development, there is a strong orientation on picking up external signals and being able to respond to them, in case required.

People in the corporate strategy system

The main people that are involved in the corporate strategy processes are the company's management team, which consists of three people. Their involvement is intensive. Employees are mainly involved through the goal agreement sessions.

The corporate centre (management team) has clear ownership of the corporate strategy processes. However, it is emphasised by participants that the strategy (decisions in the 'business plan') as such is not the most critical issue: *"strategy is basically uncritical; one can be successful also with another strategy, as long as it is with perfect implementation & execution"*. Rather the key is to making the strategy operational. Therefore much emphasis is placed on making the employee goal agreements in line to the strategy. The management team is intensively involved in strategy formation (around 10% of their time), aligning the enterprise around it and in implementing the strategy.

The management team is experienced and are the main people involved in planning. They make only limited use of advanced formal techniques and tools. Although, there is no formalised process in place for systematic scanning of business opportunities, the enterprise has strength in (informally) picking up external change, and through their small size and management commitment is able to quickly act on these signals. In general, a willingness to change seems to be in place.

5.4   Case study: VERYSoft

VERYSoft (fictive name) is an international company producing human resource management software. VERYSoft develops and designs software solutions that enable organisations to better understand, plan and manage their key talent assets. The company was founded in October 2000 as a spin-off of a larger software producer. Most people working at present in VERYSoft come from that company, including its CEO / founder.

VERYSoft is a business to business enterprise with client companies spread in Europe, U.S. and Latin America. VERYSoft offers its clients a product architecture with a wide number of modules that are easy to deploy and quick to configure. The various modules have been developed and added through time based on market demand and technological developments. The products are distributed through a global network of certified service partners, enabling the company to adapt quickly to market circumstances. VERYSoft's mission statement is summarized in the company motto: *"Real life. Real results. Real fast."* In terms of the company vision, VERYSoft *"aims to become the leading provider of talent management and workforce performance management software with a special focus on the human capital-intensive industries."*

5.4.1   Context

This section describes the external and internal environment of VERYSoft.

External environment

The broader context of VERYSoft is the ICT sector. More specifically VERYSoft develops and produces software packages in a relatively (as compared to the overall software industry) new field of business, i.e. human capital management. This market segment is in an earlier development stage, i.e. it is a young market and developing rapidly. Although the overall software industry is reaching maturity, this particular segment is expected by case participants to be growing rapidly in the coming years.

Accordingly, the external environment of VERYSoft is changing very quickly. Especially, the environment factors of the broader economy, technology and markets are driving change. But also forces related to partnerships, competitors, suppliers, customers and culture display both a high impact and high frequency of change.

VERYSoft customers include regional governments, banks and companies from other 'human-capital intensive' industries. The typical customer of VERYSoft consists of companies having 500-5000 employees. Participants consider the current dominant customer behaviour to be that of early adopters. In the coming years this is expected to shift to early followers. VERYSoft has two main regional markets, the US and Europe. The emphasis on modules that are demanded in these markets is different.

The current technology underlying the human capital software is considered to be state of the art and accordingly competition is rather modest. But competitors are rapidly identifying this market segment and competition is expected to rise strongly over the coming years, also making the technology move towards a mainstream stadium. The VERYSoft competitive positioning is based on 3 differentiating drivers: *"functional innovation, expertise and speed."* Functional innovation relates to the functionalities of the different modules. Expertise relates to the experiences and competencies of the enterprise staff, but also to the management methodologies that support the software approach. Speed relates to the development speed of the enterprise and the emphasis it puts on rapidly developing new functionality into the software: *"we are continuously investing in R&D to further reduce the time it takes for a customer to 'go live'."*

VERYSoft operates in a business to business environment with a global network of certified service partners that distribute and configure the 'standardised' software modules into customised solutions. In this context, VERYSoft works mainly with partners in the form of

strategic alliances. The intensity of collaboration with other partners, such as e.g. in software development and R&D, is only expected to rise in the coming years.

Internal environment

VERYSoft was established as a spin off from a larger software company in 2000: *"At the beginning of this adventure, the new company had to face some fundamental issues, such as the development of those typical corporate competences that the new organisation was not inheriting … VERYSoft could be typically considered as a Business Unit (BU) of the previous company, with a considerable degree of autonomy especially in the product management and development."*
According to case participants the enterprise is in its formation stage. The enterprise has around 80 employees. The turnover has grown annually with around 40% over the past years.
VERYSoft is manufacturer of 'off the shelf' modular software packages that can be customised according to specific user needs, through partner systems integrators and consultants. Accordingly, the core competencies are *"focused on the design and development of state-of-the-art technology for employee performance management and talent management software. The market strategy is based on alliances with consultants and systems integrators."*
The enterprise is established *"by a network of competences strictly interconnected, with the strategic core in one country, an operative centre in another country focused on product development and administration, and other business development centres in other countries."* Formally, VERYSoft has a holding structure, consisting of 4 independent regional organisations. Overlapping with this division in regional units of activity, the organisation has a formal, hierarchical structure with a number of functional departments such as e.g. R&D, production and marketing. Overall, the organisation is regarded as an 'e-company', from both product and process sides: *"From the product side, VERYSoft has been developing the full potentialities of the web technologies for the … product supports in the customers' organisation. From the process side, the web technologies have been addressed to give benefits to the internal organisation processes and knowledge management … and … by providing faster and more reliable customer-supplier relationships."*
The entrepreneurial, fast growing spirit of the enterprise is reflected in its emphasis on team work and collaboration across the enterprise. According to case participants *"personnel can be undoubtedly considered cooperative, as it is proved both by the remuneration strategy, based on the achievement of both organisational and individual performance."*
VERYSoft puts a lot of emphasis on fast development and R&D, in order to bring value adding functionality to the product. Through the rapid build up of new modules into the product architecture, the enterprise is able to address new and related customer needs and thus grow into new segments. As one example of the emphasis on innovation and research activities VERYSoft is active in a number of collaborative (European) research projects. *"By these activities, the company intended to foster both the research and the networking activities."* The projects, as well as other research and innovation activities are aimed *"to explore new opportunities in an emergent business field."* In this way, VERYSoft aims to quickly and adaptively grow its business, with an aim to extend a strategic position related to 'functional innovation'.

5.4.2   Corporate strategy system

"Ensuring that the strategy is correctly interpreted, and that the organization executes it correctly and effectively … continues to be a difficult art." - President and Chairman of the Board of VERYSoft

As VERYSoft was founded as a spin off from a larger company, most employees, including the management team, have also previously worked for this larger organisation. This has influenced the culture and style of management. The corporate strategy of VERYSoft is to a large extent shaped by the focus on a strong business idea. The entrepreneurial vision guides the everyday operations as well as decision making processes. Apart from the vision, the corporate strategy takes the form of a so called *'Strategy Map'* (according to the Kaplan & Norton planning tool), which contains an explicit strategy description and explanation of the corporate direction with a 3 years time horizon, as well as the company values (social values). Moreover, as part of the corporate strategy, each year a business plan contains the more operative breakdown of operations, activities, funding, quantitative and qualitative objectives.

The entrepreneur (CEO) plays an important role in the formulation of the corporate strategy. The management team supports the entrepreneur in the idea development. All employees are stimulated to participate especially in the refinement of the ideas: *"diffuse participation of all the employees in the idea refinement"*. VERYSoft considers itself to be an adaptive enterprise, with a high ability to be responsive and to a lesser extent anticipative. The strategy system is considered to be highly anticipative and reactive. Overall, following management issues are selected to be crucial for the success of the enterprise: to orient all business activities towards a common vision / strategic intent; to promote a leadership and culture aimed at growth; to respond quickly to new market opportunities; to generally enhance the use of collaborative networks (e.g. strategic alliances); to promote and 'live' conservative financial management; to make effective and efficient use of all resources (e.g. tangible & intangible); to increase mobility and ability of people to adapt in unprecedented situations; and to continuously lever and promote human talent and creativity.

The corporate strategy of VERYSoft contains three main elements. First, the overall strategic direction involves issues such as corporate identity, market added value and customer value. Secondly, the strategic map covers a strategy description and explanation, corporate direction and company values. This map follows the logic of the four Balanced Scorecard perspectives: customer, financial, learning and process. Thirdly, the business plan integrates operations, activities, funding and quantitative & qualitative objectives.

The annual strategic planning process for delivering these aspects of corporate strategy accordingly consists of three stages, as depicted in the following figure. The first phase *'idea collecting and refinement'* includes the elaboration of corporate identity, market added value and customer value. The second phase *'strategic map definition'* involves the strategy description and explanation of corporate direction (3 years) and company values (social values). The third phase *'business plan writing'* tackles the breakdown of operations, activities, funding and quantitative & qualitative objectives.
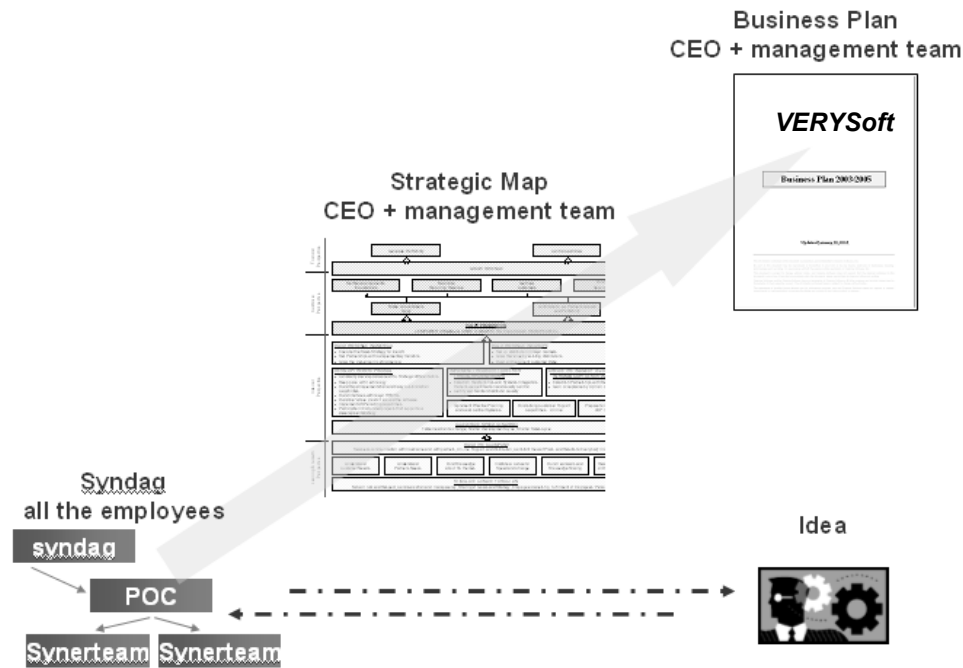
Figure 5-5: Three stages of strategic planning at VERYSoft

The idea collection process is called *'Syndag'*. It is structured around the collection of *'Potential Improvement Points'*, which can be done: per pattern – things that are important (e.g. hardware-software equipment); per area – different function; and analysis per pattern and per area. Case participants consider it to be effective when it is not clear where the problems come from and when you are stuck in daily work. It includes the dimensions: processes, resources, and climate. After the identification of the improvement points, concrete tasks are then assigned to certain persons. According to the participants, the methodology allows attaining goals and extends participation of people in decision processes. Moreover, it extends the number of people that could help the company resolve the problems. As an end result there is a way to show a solution to each area. If people are not satisfied by something, they can put all the problems on the table. First prioritisation is done in the meeting. If problems can not be solved at this level or if they imply a lot of investment, the management team has to discuss it further. The strategy map is refined through a first version that is sent around to refine and add new sections.

Concerning the business plan, it is considered necessary in order to show the long-term viability of the company to the customers, otherwise they do not buy complex software that needs continuous support. The business plan is also presented to show that it is valuable to invest in VERYSoft, that value is created, that the necessary competencies are there, and that the necessary income is generated. Numeric figures help persons to understand better the effectiveness of a plan. They also help to take decisions in corporate meetings.

For the future, VERYSoft has identified the need to elaborate a set of indicators that can give concrete numbers for the Balanced Scorecard (BSC). There are currently only a few indicators, but the indicators are not logically connected to the BSC approach. So, even though the formalised methodology, there is a big challenge in better aligning the overall strategic direction with the everyday operations.

In terms of people involvement, the key person in the CSS is clearly the entrepreneur and his management team. The entrepreneur (VERYSoft's CEO) has ideas and exchanges his ideas with the management team (8 persons). Other employees are also encouraged to

communicate with the entrepreneur. One way of encouraging such dialogue is the Syndaq process as was described earlier. The social dynamics during the planning process can be depicted as follows:
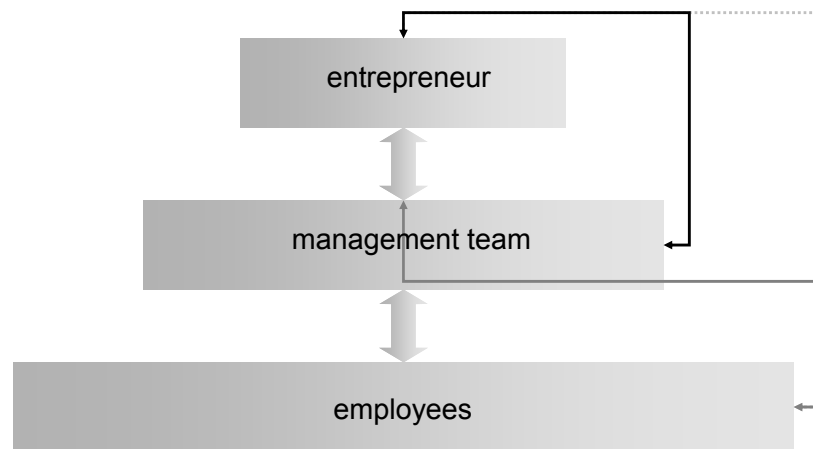
Figure 5-6: Dynamics during the VERYSoft planning process

VERYSoft uses different tools for the functioning of the CSS. The development approach behind the Syndaq process is the Organisation Lifecycle / Management approach, originally from Adizes. The approach behind the strategic mapping and business plan is based on the Balanced Scorecard / Strategy Mapping methodology, originally from Kaplan & Norton.

In the words of one VERYSoft manager: *"To provide the organisation with a uniform and complete management tool for the business planning and control, the top management decided to use the Balanced Scorecard approach throughout the organisation. This tool allowed the organisation to focus the planning and control activities not only on the finance and accounting information management, but also on other strategic processes of the organisation, concerning human resource management, innovation and research activities, and customer relationships. The use of this tool leads to the definition of a business "Strategic Map" where the company's organisation, projects, partners, network can be found."*

5.5   Case study: SolveTix

SolveTix (fictive name) is a small and ambitious telecommunications enterprise with 100 employees. SolveTix specialises in automated vehicle and person location. Through its country-wide communications network SolveTix also provides command and control, telemetric and wireless data transfer services. SolveTix's flagship product is an advanced system for vehicle security and location. Launched in July 1999, the system includes service and distress buttons installed in the automobile. By pressing a button it links to emergency centres one requires. These services are an integral part of the SolveTix package, with the company focusing on applying its advanced technology to provide added value services for the end user.

5.5.1   Context

This section describes the external and internal environment of SolveTix.

External environment

SolveTix is active in the telecommunications industry, which poses a fast changing environment that is maturing quickly. The dominant technologies in the industry are rather advanced. However, the level of technological development is still high and SolveTix intends to focus on picking up promising technologies at an early stage of the technology lifecycle in order to develop new solutions for its customers. SolveTix serves quite a wide variety of customers with its products and services. Accordingly, there are various competitive forces that the enterprise is confronted with.
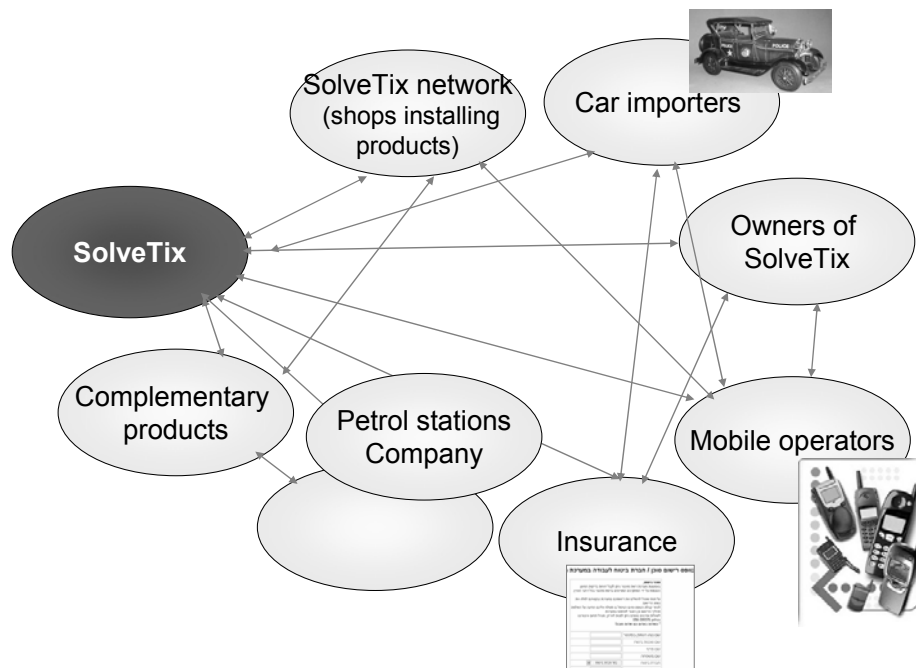
Figure 5-7: The SolveTix network of stakeholders

For a relatively young and dynamic company, there is a complex web of relationships surrounding SolveTix. As depicted in the figure above, there are various groups of stakeholders with an influence on the enterprise, such as e.g. the owners of the enterprise (SolveTix was initiated by four larger companies that are current shareholders), various customers groups (e.g. shops selling SolveTix products, car importers and mobile operators) and numerous partners and suppliers (e.g. insurance providers, complementary product suppliers and petrol stations). SolveTix has long term relationships with many of its partners and suppliers.

Internal environment

SolveTix was established in 1999 by four ICT market leaders providing finances, technology and country-wide coverage. SolveTix's current situation is characterised by strong uncertainty. As a result of strong intervention by some shareholders, SolveTix has merged recently with a company that previously was one of its major technology suppliers. It is not clear yet how exactly the 'new SolveTix' will look like under these new circumstances. The current state is that as a result of the merger, SolveTix will be listed at the Nasdaq Stock Exchange together with this previous supplier (they have been listed there before). Apparently, the current shareholders are also pushing towards a merger with one of its home country's biggest towing companies, which possess a dense network of subsidiaries all over the country. This seems to offer numerous opportunities to have a strong integration and

synergy effects along SolveTix's extended value chain. One big challenge, in this context, is the alignment of the vast network of partnerships from SolveTix International, in order to exploit opportunities to benefit mutually from both combined business networks.

SolveTix will soon offer a wide range of unique services, which are already in the last stages of development and are designed for penetrating new markets. The first years of its existence have been devoted to creation of its customer base, products and service infrastructure. Now, the company is focused on a profitability strategy.

5.5.2   Corporate strategy system

SolveTix discusses, creates and examines its strategy on a daily basis, and more formally during once a year events. SolveTix understands that today, strategy is not about 'strategic planning' rather it is more focussed on the creation and updating of a 'strategic intent'. The strategy of SolveTix consists of a strong sense of strategic direction: *"we have a clear strategic direction"*. One level more concrete, the strategy is formalised as an annual business plan and budget: *"we use the annual work plan and annual budget as the strategy"*. Furthermore, the strategy lives in the daily operations and the decisions that are taken there. The current strategy has a lot to do with survival as it is modified to deal with market conditions. Although there is a tendency to focus more on the day to day operations, SolveTix managers acknowledge that an organisation must ensure that it invests attention in three horizons: immediate, medium and long range. The main question and challenge for SolveTix and its management is how to make sure that there is enough attention also paid to the long range. The CEO states that *"actually, when we make any decision, we have in mind also the long range."*

Some issues that could be considered as part of strategic management (such as strategy formulation, organisation design, and innovation) are perhaps practiced ad-hoc in reality, but are not explicitly and systematically managed. The management team uses their experience, motivation, and intuition to run the business – but hardly uses structured tools and methods. According to the management team, this situation reflects the real life situation in a start-up company, where everybody is busy with the 'action doing', and not with the planning and methods implementation. However, the management team is aware of the importance of allocating more attention to processes, tools, infrastructure and planning.

The current strategy of SolveTix is focussed around 'piece of mind' services to owners and users of automobiles, so called location based services, in order to enhance personal security. The technology is currently based on one platform (from a supplier), but SolveTix wants to free itself from dependence on this one platform and will use independent communication networks, which will provide opportunities for offering many more services. One goal therefore is to *"develop value adding services which provide competitive advantage"* and to *"improve and broaden the services"*. In the strategy as in operations, the focus is strongly on the customer, this is because the overarching aim is to increase market share and customer base while increasing profitability and bottom line results. By the way, this is in contrast with the previous sole focus on sales growth: *"yesterday: focus (was) only on market share"*. More and more, the appreciation of the bottom line sets in, as one manager states: *"(we) focus on exploitation, while a year ago the focus was on business opportunities"*.

In a medium term future, SolveTix wants to move into *"telematics in the automobile market"* and offer *"new adding value services based on location"*. In a somewhat longer term,

SolveTix wants to grow through penetrating international markets and by becoming a market leader in the telematics market. SolveTix intends to offer *"piece of mind"* services to other customers, apart from only vehicle owners. Therefore, it wants to extend its technology platform to include *"services based on the cellular technology"*. SolveTix wants to establish itself as a *"market leader in location based services (not only in the automotive area)"* and *"approach the mass market"*.

SolveTix creates and lives its strategy on a day to day basis, and has a formal strategic meeting once a year: *"we update and focus our strategy on a daily basis. This is done personally and individually by each member of the leading team. In rare occasions we do it also in a more structured and planned way, via discussions of the leading team."*

In terms of strategy processes, SolveTix sees the main challenges in terms of implementing the strategic intent: *"we have a clear strategic direction - the problem is implementation."* It is aware of the role of the organisational lifecycle and the impact on the strategic direction of the company: *"we update the strategic intent according to the organization lifecycle."*

Strategic analysis takes place, but more or less in an informal manner: *"(We conduct) analysis of results and trends which are reflected in the financial reports, and operational reports. (We) extract "lessons learned" from this information."*

What seems to be of strategic importance is the contacts with key stakeholders: *"we meet and talk with suppliers when we consider entering a new area, new technology or new tool"*. The lessons from contacts with stakeholders can have a direct impact on the organisation: *"we continually update our processes, based on daily feedback from the customers / suppliers / market / environment."*

In terms of decision making, this is mainly done by the management team and their meetings: *"management meetings take as inputs the following: customers' needs, opportunities, competencies, requirements. These are discussed and analyzed in the meetings, but in a sporadic and unsystematic way."*

Moreover, the (creation and) implementation of strategy seems to be on an ongoing basis: *"we update what we do on a daily basis, based on the events 'in the field'."*

Also because the company is growing fast, the SolveTix management team intends to pursue strategic planning in a more systematic way: *"we would like to systemize the strategic process"*. It intends to do this through more *"focused strategy workshops"*, where time can be used to think and discuss about the longer term.

Moreover, the management team states that *"we need tools to examine the strategy with hard data, not only feelings and intuition"* and *"we will continue like today (i.e. update strategy every day by each team member) but will also add some measurement tools that will examine results regularly and frequently."*

One of the key aspects for the management team therefore is to find a way to link the longer term strategic direction with the (highly dynamic) day to day business, as following statements indicate: *"we need to link the annual work plan with the day to day management discussion"*; *"(we need to) re-examine the strategy every 6 months. Look backward and compare actual results with planning"*; and *"(we should) derive a work plan from the strategy. The work plan should cover the following: marketing, technology, finance, services, stakeholders and…results"*. Moreover, SolveTix considers linking the strategic planning stronger with the development of the enterprise: *"(we would like to) create a business development function (including business intelligence)"*.

In terms of the involvement of people in the strategy processes at SolveTix, the main people that drive the decisions are the people from the management team. The board of directors mainly looks at the 'big picture', as one participant states: *"strategy is decided by the management team – the board of directors is not interested in strategy, and gives strategic freedom (interested only in bottom line)."*

According to the management team this is possible since there is such a strong common sense about the strategic direction of the company: *"since we have a clear strategic direction, we can give the managers a tactical freedom."*

As was mentioned earlier, the (detailed) strategy is very much shaped by the everyday dynamics of the business. Through such mechanisms the employees, but also the different stakeholders, can influence and shape the strategic direction of development: *"we continually update our processes, based on daily feedback from the customers / suppliers / market / environment."* Moreover, SolveTix considers making more use of external support in moderating the planning processes as they want to *"use strategic and organizational consultants"*.

With the intention to systemise the strategic planning process more, SolveTix is also considering to make more systematic use of management tools, especially for data collection and analysis*: "(we need to) enhance the use of information systems, and a support to strategy planning and examination"*; and *"(we will) allocate resources for tools that support and encourage strategic thinking"*.

5.6   Case study: Linux

This case study [5] is about Linux, which is an organisation that develops software. However, it is not an enterprise in the traditional sense of the word, i.e. it is not one single legal entity. But rather, Linux is a collaborative network that unites numerous talented software developers, companies and users across organizational and geographical boundaries. It is a virtual community that organises itself mainly through the Internet using communication tools like mailing lists and internet discussion boards. The virtual character of the community makes that the boundaries of this organisation are neither uniformly defined nor commonly accepted. For this research, Linux is defined as the 'project' that develops and maintains the Linux operating system.

The Linux kernel community has been 'founded' in 1991 by Linus Torvalds, when he released the first lines of software source code for his operating system on the Internet, asking for contributions to his hobby project. Since then, the Linux organisation has grown exponentially. For example, over a period of just five years (1995-2000), the size of the community increased by four fold, the structure of the Linux source code became modularized, and the demographic distribution of the community became much more diverse [Lee and Cole, 2003]. Programmers, translators, testers and authors from almost every region in the world contribute to the development of Linux, without ever seeing each other in real life. Some of them spend four to ten hours a day on the development of Linux.

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[5] Note that some of the ideas and analysis of this case study have been published in the following article, which is co-authored by the author of this thesis: Wendel de Joode, R. van and Kemp, J.L.C. (2002): *The strategy finding task within Collaborative Networks, based on an exemplary Case of the Linux Community*, in: Camarinha-Matos, L.M. (Ed.): *Collaborative Business Ecosystems and Virtual Enterprises*, Kluwer Academic Publishers, 2002, pp. 517-526.

The current exact size [6] of 'the Linux organisation' is hard to determine. There are estimates of thousands of developers actively working on Linux. For example, according to Lee and Cole [2003], over the period 1995-2000 somewhere between 2600 and 4100 people have been involved in software development and bug-reporting activities in the Linux community. While in the beginning most developers were working for Linux on a voluntary basis, there is a rapidly rising number of developers who are directly paid for their activities in Linux [Hertel et al., 2003], for example with companies from the ICT sector: *"Of the 1000-odd developers actively working on Linux, more than half are now direct employees of big tech companies."* [Financial Times, 2003]

5.6.1   Context

This section describes the external and internal environment of Linux.

External environment

The broader economic context of Linux is the environment of the information & communication technologies (ICT) industry and more specifically the computer and software business. The computer and software business is changing rapidly and becoming more and more mature. In the hardware business, commoditization has been a longer term trend: *"The shift to low-cost has pretty much been consistent since the computing industry was invented. The falling price of chips has made price deflation a familiar pressure."* [Financial Times, 2003] Due also to Linux and the broader 'open source movement', operating systems (and some software applications) are rapidly becoming a commodity too, threatening those enterprises that make a business of developing and selling it: *"The computer industry has been built on a single premise. Companies invest to create software, sell it, and poor a good part of the proceeds into building more. Now, with the open-source philosophy, that stream of revenue is threatened."* [Business Week, 2003, p. 50]

Hand in hand with the trend towards stronger customer orientation, this seems to be shifting the business model in the industry away from hardware and operating systems towards more value-added software applications and services: *"… a different business model may be emerging. With hardware and operating systems becoming more standardised, computer makers will have to turn to other areas – the software applications that run on computers and the services and support needed to build complex systems – to generate a profit."* [Financial Times, 2003]

Linux has already gained a significant share of uptake in the market of server computers. The main customer behaviour is described as 'early adopters'. With broader awareness and acceptance, for the coming years, this is expected to shift to 'early followers'. The segment for server computers is part of a larger market: *"Linux has yet to have much impact in the highest echelons of business computing: telecoms-billing systems, airline-reservation systems, and so on. But it is advancing steadily."* [The Economist, 2003a] These various factors related to technology and market developments give rise to the perceived uncertainty in the environment.

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[6] As Linux is 'open source' software, i.e. basically for free, there are no direct figures on turnover or sales. However, some estimated indications can be given on the economic impact: by 1999, it has become the World Wide Web's leading operating system, running 31% of the Web servers (versus 24% for Windows and 17% for Solaris) [Lee & Cole, p. 636]; It has grabbed 13,7% of the overall $50,9 billion market for server computers. That figure is expected to jump to 25,2% in 2006, putting Linux in the No. 2 position [BusinessWeek, 2003, p.48]; the annual global sales of Linux-powered servers stand at about $8bn with a recent annual growth of 6 per cent [Financial Times, 2003]; It now has more than 12 million users worldwide and an estimated growth rate of 40% per year [Lee & Cole, p. 636].

The competition is currently stated to be of 'mid competition', but there is a potential that it will move quickly towards 'high competition' in the future. Yet, these terms are ambiguous when talking about Linux and open source, since the communities and most of their members are typically in pursuit of a large market share. Linux itself is not a commercial entity set out to compete. The purpose of the volunteers especially in the earlier days of the Linux community has been more related to fun (in writing elegant code) and earning a reputation among peers, rather than making money and creating competitive advantages. [Torvalds & Diamond, 2001]

However, the current reality is that a high quality, competitive product has arisen from this collaborative effort. This, in combination with the fact that Linux is basically available to everyone [7] and at no cost, is an extremely dangerous package for especially those firms that are competitive operating system vendors: *"Linux strengthens the hand of those firms that champion technological diversity, such as IBM and HP, and undermines firms that push their own technology at the expense of all others, such as Sun – and Microsoft."* [The Economist, 2003a]

Linux is itself a collaborative network of individuals spread around the globe, connected mainly through the Internet. Next to the developers and testers involved with the Linux operating system, there is a broader network of members related to various kinds of software applications and their use. There are estimates that in the broader periphery, there is a community of tens of thousands of members: *"It is estimated that the worldwide Linux community contains roughly 20.000 – 30.000 members, of which the largest extent of people work on OS* (note: operating system) *applications."* This number includes developers of applications that are related to Linux (e.g. OpenOffice) but also its interested users.

Apart from this network of developers, testers and users, increasingly various groups of (commercial) organisations are getting involved in various ways, such as hardware manufacturers, distributors and services and consultancies. The resulting stakeholder web is a loosely coupled collaborative effort of individuals, organisations and (user) groups with a wide variety of stakeholders; however the stakeholders are without much (formal) influence on the organisation. Various stakeholders in the broader community of Linux are increasing their revenue streams through the collaboration with Linux. Also early customers do see the clear benefits that Linux products provide. But when overlooking the whole value chain for computing, incl. hardware, operating systems, software applications and computing services, Linux and its products are only a small building block. Operating systems can be compared to an infrastructure position [e.g. van Wendel de Joode, 2003], i.e. it is important for the performance of the overall system but its providers do not have the direct contact with the users. Also, the open source philosophy and its intellectual property licenses do not allow one element in the web to hold a dominant position, but rather the rights are distributed.

Internal environment

"The fundamental unit … is not the corporation but the individual. Tasks aren't assigned and controlled through a stable chain of management but rather are carried out autonomously by independent contractors. These electronically connected freelancers – e-lancers – join together into fluid and temporary networks to produce and sell goods and services." - Malone and Laubacher, 1998, p. 146

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[7] The basic philosophy of open source software is not that the product is free (like 'gratis'). Open source can be commercially sold and depending on the license there are restrictions for the use of open source. Yet, almost all open source programs and the source code, which is the human-readable part of the software, can be downloaded for free from the Internet.

Linux is a collaborative network and distinguishes itself at least in three characteristics from more traditional companies [based on van Wendel de Joode et al., 2003]:

- *Open source* [8]: Intellectual property is protected through special licenses that ensure that everyone can download, use and adapt software.
- *Voluntary basis*: only a few developers make money through the sales of open source software. They are volunteers.
- *Virtual community*: there are few formal authorities to enforce decisions on the community; it is geographically dispersed and connected mainly through the Internet.

The development of the Linux community so far can be divided into three phases – birth, advancement and maturity [van Wendel de Joode and Kemp, 2002]. Linux is still advancing progressively, in terms of e.g. number of users, volume, etc., but there are also signs of maturity setting in.

The main orientation of Linux in terms of value proposition continues to be on the product. The product of Linux is the operating system of the same name. Linux is open source software, which implies it is available at almost no cost (under the so-called General Public License). Therefore, it has a number of distinctive advantages compared to other products, especially compared to proprietary operating systems. Linux for example adds value in terms of costs and flexibility as Linux *"is free, unlike such rival operating systems as Microsoft's Windows and Sun's Solaris. And it runs on almost any computer, providing compatibility, flexibility and further cost savings."* [The Economist, 2003 April 12] Moreover, Linux products are claimed to be robust and secure: *"because the source code can be scrutinised by anyone, which makes it more likely that programming errors and security holes will be found."* [Economist, May 12 2001, p. 71] Moreover, what sets Linux also apart from most other products is that it offers independence. Many companies and individual users turn to open source because they feel that they can change the software themselves and therefore are less dependent on a specific supplier [e.g. Ghosh and Glott, 2002].

The Linux organisation is developing technology very quickly, but incrementally. The primary resources of Linux are the wide number of developers, testers and users that collaborate online for creating a valuable product. Through the dynamic interactions, openness of the community and informal collaboration mechanisms, these resources are able to develop quickly. The development of especially new areas of technology application is mainly opportunity-driven and not created proactively. The underlying mode of development is by some compared to the 'scientific method' [Lee & Cole, 2003]. This implies that there is fast community based knowledge creation that bases on similar principles as academic communities, such as e.g. transparency, openness of the source code, fast feedback cycles, among others.

In terms of the organisational structure, the main unit of Linux is the individual. The main activities are the various development and testing tasks that the members of the community conduct. According to Lee and Cole [2003], Linux members carry out two important functions in the development process: *quality assurance*, e.g. bug reporting, identification, correction, and testing; and *innovation*, e.g. suggestions for new features and writing software patches (i.e. chunks of computer code) to enhance the usefulness of Linux. These activities are clustered in projects, which can be considered the primary units of activity of Linux.

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[8] The open source movement (if we can speak of one movement) is grossly divided into two camps, namely the free software camp and the open source camp. There are some ideologically differences between the camps, yet many of the practical activities are the same [van Wendel de Joode, 2005]. The term "open source" is used as an umbrella for the open source camp but also the free software camp.
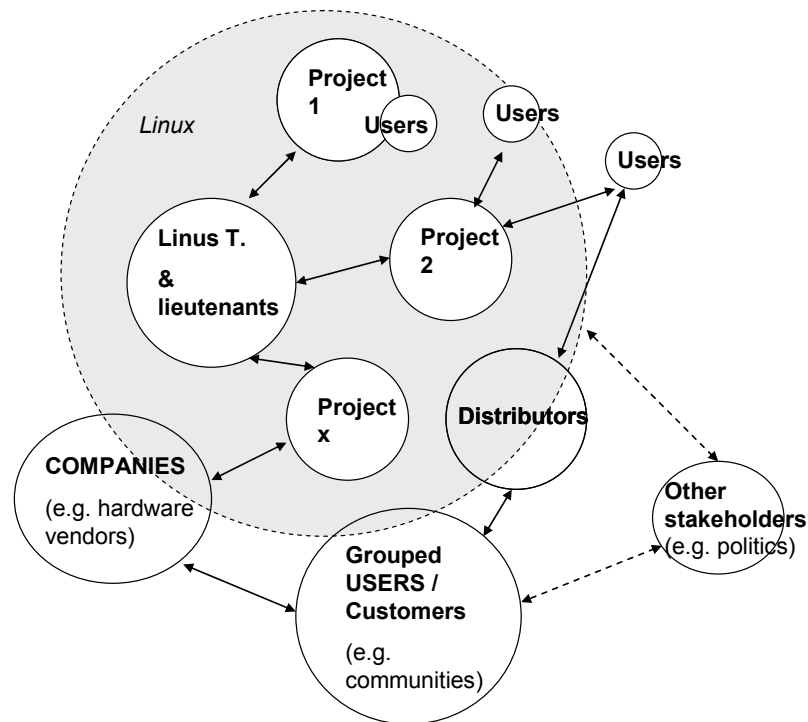
Figure 5-8: Linux as a loose, collaborative network

Apart from the roles of the users and other stakeholders in the network the Linux community is structured along a virtual hierarchy with a small core and a large periphery: *"The core consists of a project leader and hundreds of maintainers, while the periphery has thousands of developers organized into two teams, namely the 'development team' and the bug reporting team'."* [Lee and Cole, 2003, p.641]

The maintainers, which are the development leaders of the modular subsystems, constitute something more or less resembling the 'middle-management' layer of Linux. However, the management role is not comparable to that of commercial enterprises, or even in other software development projects: *"OSS projects do have project leaders who invite contributions in certain areas. Of course, the role of project leaders in an OSS development is considerably different to a conventional software development project. They have to market their requirements to the community and do not have line authority over those who contribute for them."* [DBE, 2004]

The projects are set up and coordinated in an informal and self-organising manner: *"The roles emerge in the process of performing tasks, as opposed to being planned or someone being assigned to carry out a task. For example, in the core, the project leader as well as the maintainers, who are responsible for various subsystems, perform the selection of source code and decide which code should become included in the next kernel for official release."* [Lee and Cole, 2003, p.641]

It is exactly through such extremely dynamic and interactive processes of starting new initiatives, creating new pieces of solutions, following new user needs that the overall organisation becomes extremely adaptive. The Linux network in an organic manner is able to identify opportunities continuously and whenever there are enough individual members that show an interest in them the opportunities can be attended to quickly.

Through these spontaneous processes of innovation and knowledge creation, Linux has been able to grow into numerous related areas of business [BW, March 3 2003, pp. 50] as *"the operating system is finding its way into a wide variety of devices and uses",* such as

corporate computing, desktop computing, simulation, digital animation, number-crunching and consumer electronics. These and other examples demonstrate the adaptive strength of the collaborative network in naturally evolving and therefore growing into related areas of activities through innovation.

5.6.2   Corporate strategy system

"When we look up into the sky and see a flock of birds flying in formation, we tend to assume that the bird in front is the leader and that the leader is somehow determining the organisation of all the other birds. In fact, biologists tell us, each bird is following a simple set of rules – behavioural standards – that result in the emergence of the organisation. The bird in the front is no more important than the bird in the back or the bird in the middle. They're all equally essential in the pattern they're forming." - Mitch Resnick (MIT) in Malone and Laubacher, 1998, p. 152

Linux has neither a formal organisational structure with a corporate centre, nor a formal corporate strategic planning process. Central control to make long-term 'strategic plans' and decisions is absent in the Linux community. Still, Linux is surrounded by institutions and mechanisms that fulfil these functions in an emergent and to a large extent self-organising manner. For example, Linux does have hierarchical decision-making mechanisms in place for deciding on technical matters and Linux has community leadership albeit in a more symbolical role. Corporate strategy lives as a resulting emergent pattern of decisions and the corporate strategy process can be considered as the self-organising sequence of strategic actions and decisions by the developers in the community who do the actual work.

The mission of the Linux community evolves around *"developing high quality and elegant software"*. The vision of the developers relates mainly to the product, i.e. developing software that is elegant and based on source code that is open. The underlying purpose of the community lies in increasing participant and stakeholder value (in contrast to for example a commercial enterprise that is oriented on delivering shareholder value). The scope of corporate strategy mainly involves decisions that are focused on the technical artefact, i.e. the software. Although not stated formally, strategic objectives of the community can perhaps best be described as: *"to develop elegant software; to attract volunteers; and to keep the source code of software open"*.

The corporate strategy should in this case be considered as the emergent pattern of decisions (see: definition of strategy) and the overall strategic direction lives as a common mental model. In other words the strategy is not made explicit, but rather exists as an implicitly shared notion.

The collaborative purpose of the open source community is focussed on technical issues and is not really expressed in commercial terms: *"the open source community focuses more on technical essentials"* and *"the open source world does not think in categories or market orientation but develops the technology"*. However, the commercial enterprises that are involved in the Linux community intend to generate value for their customers (and their shareholders) through their involvement, as one statement exemplifies: *"we know what the client wants and orientate in this direction. Open source serves as an idea producer and IBM has the role to deliver this input."* In this way, the overall purpose of the community is an amalgam of individual interests and interests of the organisations that are involved in the Linux community.

The corporate strategy system governs corporate development processes. The development processes of Linux are rather spontaneous and based on quick sensing of opportunities. Moreover, through the transparency provided by the information infrastructure and open

boundaries (easy in- and outflow of fresh insights, capabilities), the Linux community is able to quickly adapt to the environment.

Through various mechanisms [van Wendel de Joode & Kemp, 2002] a process of corporate development is shaped together with a collaborative network in which strategies organically evolve and live as an emergent pattern of activities. New users are tempted to join the community through low entry barriers and high intangible benefits. Users join projects they prefer, and an audience for developers arises. Developers represent the value adding capacity of the community. Developers seek reputation, which is earned when the job is well performed and the audience is big. Developers will therefore go to projects that require their knowledge and skills and that are popular among developers and users. In this way, in a process of natural selection, developers and users cluster around popular projects and less popular projects will eventually 'die'. The aggregate behaviour of developers and users ensures a corporate development process that is characterised by the ability to evolve in a natural and smooth manner. In a spontaneous self-organising manner, the collaborative network deals with upcoming opportunities and unanticipated changes.

Decision making structure and the role of leadership

The corporate strategy system in this case consists of the virtual management hierarchy and decision making structure. Many of the decisions are made during day-to-day activities of the members in a bottom-up process: *"the decision-making process is highly social and stratified."* [Lee & Cole, 2003, p. 642] Linux does not have a corporate centre or formal organisational structure, at least not in the traditional sense of the word: *"The Linux project has neither top-down planning nor a central body vested with binding and enforcing authorities. Its power, the source of it bubbling creativity, is instead in the ceaseless interactivity among its developers."* [Kuwabara, 2000, p. 2] However, there is a virtual management structure consisting mainly of the people who have proven their development skills and their commitment to work on the project. Many of them become what is known as 'maintainers', which can best be translated as project managers designated to work on a specific piece of software. The group of maintainers form a structure that is like a middle management. The middle management, i.e. the maintainers or lieutenants, are selected in a self-organising manner [Interview with Torvalds, 2004]: *"The lieutenants get picked. It's not me or any other leader who picks them. The programmers are very good at selecting leaders. There's no process for making somebody a lieutenant. But somebody who gets things done, shows good taste, and has good qualities -- people just start sending them suggestions and patches. I didn't design it this way. This happens because this is the way people work. It's very natural."* There are no formal procedures for becoming a project manager; it is rather a result of past performance and reputation: *"One knows the people, who have produced good code in the past. ... It is not like an organisation, where the boss defines, but such a structure is based on performance. The hierarchy is based on past performance."*

Most of the communication and coordination of activities is done on-line. Most members have a very loosely coupled and rapidly changing relationship with other members. Most of them work relatively independent of each other on the problems they face. Communication between the members is very informal and frequently centred around rather specific technological issues. However, the community does have a sophisticated infrastructure, consisting of tools like e-mail, Internet Relay Chat, discussion boards, project tools, File Transfer Protocol, software versioning systems to facilitate collaboration. These internet tools

enable people from all over the world to coordinate their work and cooperate with each other. They also make it easier for outsiders to join the community as it gives them an insight in the way the community functions: what the rules are, how to communicate with each other and where to download and upload software. These tools thus create a very open community, because they lower the boundaries to join the community and put communication out in the open, which means that one can easily learn from the discussions and the behaviour of other members. This communication infrastructure also provides almost complete transparency in the decision-making processes (centred on technical issues of the products).

In this way, the corporate strategy system involves providing a platform for communication among the members and among the units of activity (the projects) in the network. The underlying infrastructure provides the transparency of decision. Although their influence and importance is discussed, the 'top management' of the network (i.e. the community leader and the maintainers) do have an important role in technical, product performance related issues: *"Torvalds still orchestrates this digital quilting bee. He has final say on everything that goes into the updates of his operating system – and doesn't mind being called the 'benevolent dictator' of Linuxland."* [BW, March 3 2003, p. 51] The role of Linus Torvalds not only lies in decision making, but also (like the top leaders in other organisations) in him being a symbol and representative of the organisation: *"He's also the symbolic leader of a movement made up hundreds of companies that are involved in Linux development, in addition to the thousands of volunteers."* [BusinessWeek Online 2004]

Linus Torvalds recognises the importance of the individual members and the strong role of the corporate strategy system to provide a platform for communication between the members. In an interview, Linus Torvalds describes his role as follows [BW Online, 2004]:

 "What I do mostly is I'm a communications channel. I'm one of a couple of central points for discussions. I have all the patches come to me, though I have sub-lieutenants doing the programming work. I'm a meeting point, rather than a software engineer. I don't do much programming anymore. I don't decide what needs to be done. It's defined by what people need to get done and what they want to do. Getting it working together -- that's where I and other organizers come in."

Thus the corporate strategy system in Linux involves a decision making structure in which hierarchy is based on past performance and reputation, and community leadership that also plays a more symbolical role both internally to the developers in the community and externally to users and competitors alike. The decision-making structure is transparent and makes use of an online communication platform.

Processes of decision making

Linux has no formal corporate strategic planning processes and there is no formal corporate planning unit. The corporate strategy process in this case is an emergent pattern of decisions. In other words, the main focus lies in strategy realisation: *"Open source is about doing".*

The process of decision making in Linux is by some [Wayner, 2001] described as a bazaar approach, as opposed to the cathedral approach: *"Strategic decisions are made by itinerated tapping into the future. This can be done on the one hand by the 'Cathedral-Approach' via management and analysis or on the other hand by the 'Bazaar-Approach' via prototyping."* According to one case participant in a bazaar *"those things are done which are most urgent. There is a technical authority, absolutely humanistic. The technical hierarchy is based on technical authority. The community is very hierarchic in order to be able to work (maintainer,*

experts, etc.). The hierarchy, in comparison to other organisation forms, is caused by technological and grown authorities within the community. It is very personal. Code and power structures are public."

Interestingly enough the bazaar-style decision making process can conflict with the more formal planning processes that commercial enterprises, which are actively involved in Linux, conduct: *"there is a clear conflict of interest between economics and open source with the aim to reach value add for the enterprise"*. Even some of the strongest commercial enterprises active in Linux have no real leadership in open source. As they are just one player in the OSS community, a commercial company has no leadership over activities and outcomes: *"we are not the ones to decide, what is happening in the community."* Of course, code can be proposed but *"we don't set the dates. We are only one player."* This complicates planning and business processes for companies that are involved in the community: *"planning is nice. But if the plan is too sharp, if things are planned, that can not be planned, it does not have any use in open source work."*

5.7   Case study: TelEquip

TelEquip (fictive name) develops, manufactures and installs complete communications systems and solutions and offers associated services such as consulting, training and maintenance. Its worldwide customers include telecommunication carriers, Internet Service Providers (ISPs) and enterprises of all sizes – from small and medium-sized firms to multinational corporations: *"TelEquip is a leading provider of network technology for enterprises, carriers and service providers. The company provides complete solutions from a single source for the infrastructure of the next generation network - optimized for a prompt return on investment and to open up new business opportunities for customers."* TelEquip has sales of more than 10 billion euros; R&D spending of around ten percent of sales; and employees worldwide of more than 40.000 in 160 countries.

5.7.1   Context

This section describes the external and internal environment of TelEquip.

External environment

The external environment of TelEquip, which is the information & communication technologies industry, is in a state of turmoil. The ICT industry is broad and ranges anywhere from for example cables to end users. Zooming in on the telecommunications sectors for infrastructure and equipment, for both fixed and mobile networks, there are different cycles to pay attention to. From chips to suppliers, all have been impacted by software (and its downturn). There is a delay in the economic cycles of the different sectors. Chips is first to feel the downturn, then telecom, and infrastructure providers as latest. In this way, the different cycles are connected to ICT. While in recent years the industry has boomed and there have been growth levels for most players, according to one participant *"it remains to be seen how it will now further develop: for example which firms will survive; and those that survive what they sell to whom; and who will outsource what to whom, etc. etc. … This effect is amplified especially by ‚convergence' of the different sectors."*

TelEquip is a provider of network technology for enterprises, carriers and service providers. The levels of competitive intensity are very high. There are various reasons for this. However, the main reason is seen in the consolidation of the telcos (telecommunication carrier services), which are the main customers of TelEquip.

Moreover, the heterogeneity of competitive forces is rather high. TelEquip faces a wider variety of different competitors, which are sometimes also customers. All in all, the competitive forces are highly unpredictable. The level of complexity in this environment, especially at the end user side is quite high. Also, their behaviour is unpredictable, take for example the SMS (*note*: short message services). Nobody has expected it would take up so exponentially.

There is a considerable variety of stakeholders that TelEquip is dealing with, most notable shareholders, customers, suppliers and partners. The main *customers* of TelEquip are telecom carriers. The strategic focus is clearly on big customers. The biggest market potential lies with these carriers, especially the 15 or so top ones. TelEquip has a significant share of the total market, for some companies it has close to 20% of their total equipment supplies. The dominant customer behaviour currently is described as 'early followers'. However, the expectation is that in future the dominant groups of customers will behave as 'early adopters' (after the downturn, with many new technologies awaiting).

Suppliers can range from: chips producers; manufacturers of switches; synthetic materials firms; etc. etc. TelEquip has a low level of vertical integration of production, which is typical for an enterprise following the systems integrator model. There are all kinds of relationships with suppliers ranging from transactions and repeated transactions to long-term relationships, buyer–seller partnerships, strategic alliances, network organisations and vertical integration.

Concerning *partners*, especially in the area of new technologies and its development, alliances and partnerships are actively pursued. Partnerships are started with the intention to later buy a firm or the technology. But partnerships are also sought to stabilise prices. Overall, the intensity of partnerships is rather moderate. Participants expect that in the future, mainly due to market developments *"the general levels of partnerships in the industry will rise from none to numerous partnerships"*.

The level of competition TelEquip is facing in the markets is very high and TelEquip is not the market leader. The aim is to be number one or number two in the markets. But so far, other players are more dominant: *"TelEquip is in no dimension super good: it is innovative; it is cost efficient, etc. But in none of the dimensions it is the absolute leader (at the moment)."*

The value web around the enterprise can be expected to grow more strongly together, therefore integrating different currently more separate sectors. In the future this will lead to a stronger interrelation through the telecommunication markets. The main reason for this is the trend of convergence: *"This will lead to a mobile communication dominance in some 5 to 10 to 15 years."*

Another force behind the changing value web is consolidation. In earlier times, there used to be higher levels of diversification in the markets. But other players have either reduced their activities or have gone bankrupt. Concerning technologies, there is wide level of diversification in the marketplace. However, also here there are currently counter forces in place towards more centralisation.

Internal environment

With the external environment being in a state of frequent and considerable impact changes, TelEquip has taken up the challenge to adjusting its internal context accordingly and preparing for the future through a thorough structural change program. The level of maturity within the corporate lifecycle is interesting and needs to be analysed with some precaution. The different business units and the underlying technological competencies are in various stages of their development.

The enterprise is divided in four main business units, which are called 'Divisions'. The first offers communications solutions for enterprise customers. The second offers network solutions for carriers. The third supplies end-to-end solutions for broadband access. The fourth provides solutions for optical backbones and carrier & metropolitan networks.

The four business units are regarded as independent profit centres and are active in different markets, addressing different customer groups with different products or services. But, they are also working together in order to find and exploit possible synergies.

Traditionally TelEquip has a strong focus on delivering innovative and technologically superior products: *"… the reality is that the company has regarded itself until now as 'professional inventors'."* This would speak for an orientation on 'product value'. However, there are various initiatives to move strongly towards offering more 'customer value', i.e. a strong drive to move away from merely selling products (or services) to delivering customer solutions. TelEquip increasingly dedicates itself to offering solutions to customers. Moreover, TelEquip is pursuing a strategy of a 'systems integrator', which is characterised for example by the low levels of own production and a position in the value chain close to the customer (e.g. carriers).

Finally, there are some indications that in the future, some attention will be paid also to optimising excellence of the whole corporate system: *"until now it has not been really necessary to optimise its operations, like the way it has been done in the automotive industry."*

The technological competencies on which the four business divisions are based are in different states of technological maturity. The current innovative capacity is described as 'business process improvement', which implies incremental innovation of the corporate system. This can be seen in the strategic shift away from product & technology thinking towards more customer oriented innovation: *"The idea should be to shift from invention management to delivering innovations."* In its strategic thinking about innovation, TelEquip is starting more and more from the end user point of view. The strategic priority for TelEquip at the moment is regarded to support customers in difficult times and *"to raise the ratio of profit/turnover per customer, i.e. raise margins and profitability. Moreover, the intention is to learn much more about the behaviour of end users (customers of customers)."* This shift in strategic approach, moving towards higher value added services, leads to a stronger focus on market related knowledge and consulting-like skills, apart from purely technological competence and invention.

The collaborative form of the corporate system of activities shows that there is not a lot of collaboration between the units of activity; units are mainly steered by a strong dominance from the corporate centre. However, there is a growing awareness of the importance to collaborate more strongly together. The main argument and drive behind this is the vision of exploiting the existing, vast base of experience & knowledge by making TelEquip a collaborative, knowledge enterprise. Many initiatives have been undertaken to promote

collaboration across units, across countries. The main motivation is to overcome organisational hierarchic, business process and project related and local, time, cultural and language barriers.

The direction of corporate growth is described as 'market penetration' and 'globalisation', where in future the main focus will be on 'market penetration'. With some markets consolidating, it is only the market for applications that is regarded as a growth market: *"at the moment there seems to be only one market at the moment with growth potential. This is the market for applications; which is a services business. For the rest, it is mainly a matter of consolidation and positioning on the current markets."*

The capacity of the organisational system to adapt to changing environments demonstrates a rather low level of adaptivity to change signals. The orientation of the corporate strategy is said to be low in anticipation and responsiveness to environmental pulses. However, the external environment is extremely hostile and tough for all players in the industry. Moreover, TelEquip is taking drastic measures towards change. One example is an initiative for driving corporate development among different dimensions in parallel. Time will tell how agile, innovative, collaborative and knowledge-based the enterprise will come out of the current downturn in the markets and drastic internal transformation programmes.

5.7.2   Corporate strategy system

The corporate strategy inside TelEquip exists as a report. The corporate plan is defined as part of an annual planning cycle. In strategic planning short, medium and longer term issues are taken into consideration. The main short term issues are related to the budget planning and performance targets discussion. The main medium term issues are related to product/market dynamics, customer demand and the identification and selection of business innovation opportunities. Also the initiation and conduction of strategic change (labelled 'business transformation') projects in cooperation with the business units can be considered medium term oriented. The longer term issues relate mainly to analysis of longer term trends, such as those related to the industry and technologies.

The corporate planning contains both qualitative and quantitative elements. The main quantitative aspects are related to budgeting, performance measurement and market forecasting. The main qualitative aspects are related to competition, innovation, customers, products, and technology, among others.

The planning process can be considered systematic and formalised. Although, until recently the process mainly existed on paper and in reality was executed more informally, as one participant notes: *"Until recently there has not been a really pre formatted, structured planning process. Since recently the corporate central planning unit has been founded. Before that time, a strategic planning process has existed on paper. But many of the strategic decisions have been taken in an ad hoc manner."*

The new corporate central planning unit, of around 50 people, has formal responsibility for driving the corporate planning process. The corporate central planning unit reports directly to the board of directors. Moreover, as depicted in the figure below, the main strategic decision making organ is a committee consisting of the board of directors and representatives from the different business units. The main role of the corporate central planning unit can be said to be about resolving conflicts (like mediators, diplomats) and aligning the development of the units of activity.
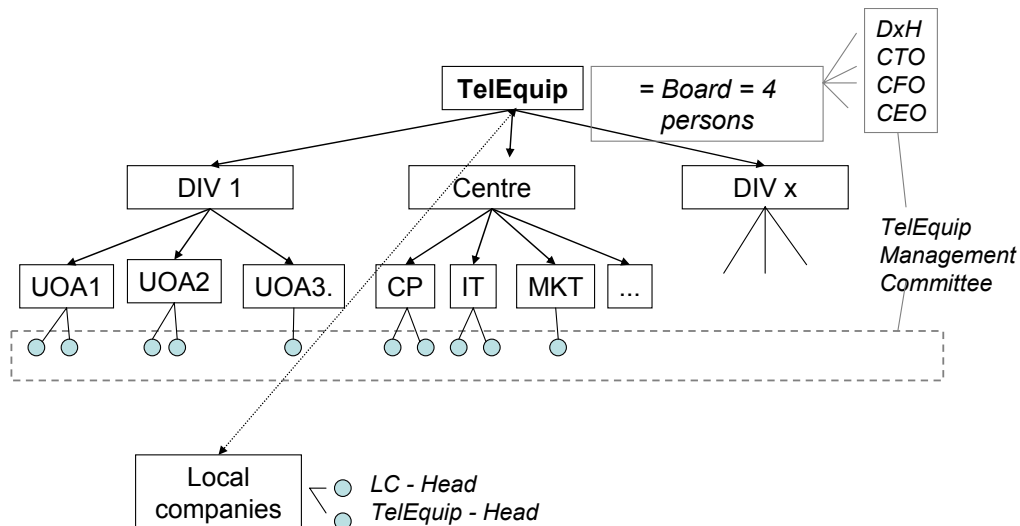
Figure 5-9: Corporate management structure at TelEquip

This figure displays the different players in the TelEquip strategy system (*note*: DIV = division; CP = corporate planning (central unit); LC = local companies; DxH = the head of one of the four business divisions). The top management of TelEquip consists of a four person board of directors and persons representing the various business units and corporate centre. The main strategic decision making body is represented by the management committee.

Before the central unit has gotten formal responsibility for brokering TelEquip corporate planning, it has been a variety of smaller groups for which the current head of the unit was responsible. The central planning team has been founded in order to be brokers of the strategy development processes within this overall structure.

The flow of processes follows a formatted design, but there is built in room for dealing flexibly with unanticipated (internal or external) events. Although there are pre determined strategy processes, *"the main cornerstones of the strategic planning process are the workshops with the different Business Units."* The processes for strategy formation are only part of these discussions with the units, not even the central element as many of the discussions focus on technical aspects of the businesses.
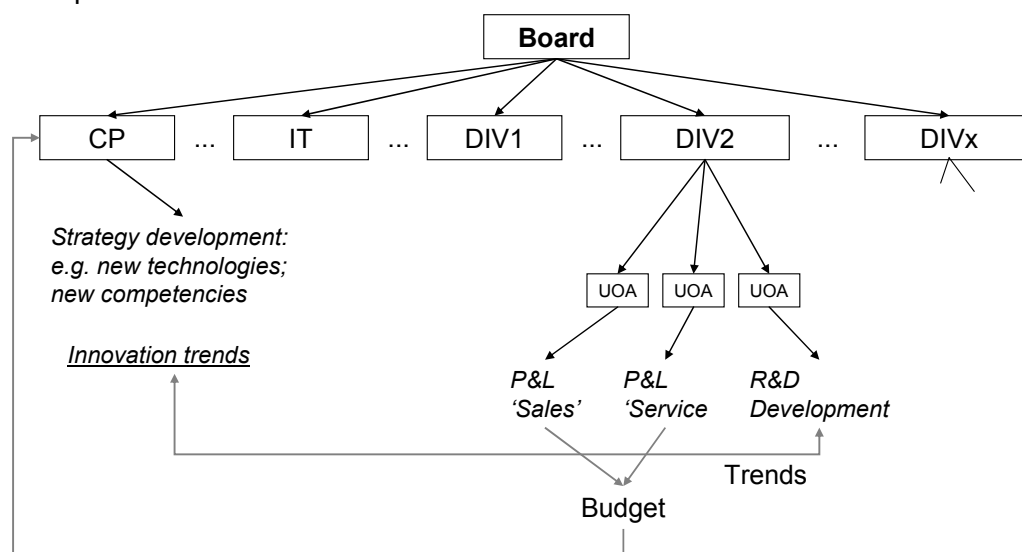
Figure 5-10: Corporate strategy process and interaction with business units

As the graph makes clear, the corporate central planning unit (CP) is the focal point for bringing together different innovation pulses coming out of the units and integrating them into a coherent strategy for development and innovation, therefore taking into consideration new technologies and new competencies. The flexibility arises from the fact that for key decisions, use is made of the '4 eyes principle' (centre and unit). When confrontations occur, solutions are sought by the unit and the corporate centre together, i.e. 'double hand' approach.

The flow of making decisions should also be seen in the context of these dynamic relationships between the corporate centre and the various business units. It is argued that the flow of decision making contains both strong bottom up and top down forces, i.e. main strategic decisions are taken in cooperation between the corporate centre and the units of activity. Alternatively, some decisions are taken centralised, others distributed.

The elements in the corporate strategy system that are related to development of the businesses is strongly driven by the business units: *"the corporate development strategy of TelEquip is driven bottom up (from the SBU). Profit & loss is made in the business units, they have the profit responsibility. The business units are the 'entrepreneurs'. Strategy focuses on aligning the units."* However, there are also indications for top down forces. This is mainly because in the current constellation there are always various actors involved in key decisions: *"the corporate strategy system at TelEquip is very challenging and not ideally typical. There are no singular decisions, because always various actors are involved. Compared to for example IBM, where the strategy head, CIO and VP business transformation are one person. But inside TelEquip, these are all different persons."*

Corporate strategy system functions

TelEquip follows the strategy of a solutions provider, a systems integrator. A systems integrator requires different competencies than a manufacturer of hardware, as for example it requires more skills in services and consulting: *"Those who only follow this corporate strategy will in the long run not have own production anymore. This would imply for TelEquip that it would become a sales organisation, where there are no distinctive competencies. But the reality is that the company has regarded itself until now as 'professional inventors'."*

The corporate strategy system plays a key function in the *leveraging of resources*. First of all, key areas of competence that the enterprise should master are identified and determined in the corporate planning processes. Furthermore, as described earlier, in the technical and business innovation processes the corporate strategy system plays a consolidating role. And finally, also in the implementation of this knowledge enterprise vision, the central planning unit plays a leading role.

There is a sense of direction and the corporate purpose is reflected in various statements, such as e.g. mission, vision and goals. The discussion of aspects related to corporate purpose is part of the corporate strategic planning process. Also various longer term trends, e.g. macro-economical, are part of the strategy discussions. However, the *provision of purpose and direction* does not have a prime role as more attention is being paid to, for example, competitive forces and innovation dynamics.

Within the dynamics of new products, market applications and business segments, the *composition of businesses* is of crucial importance to corporate development. This function of composing a balanced selection of businesses (areas of economic activity), accordingly receives significant amount of attention in the corporate and business strategic discussions.

TelEquip strongly focuses on organic growth through innovation and alliances. The (coordination of the) innovation process is integrated directly into the workings of the

corporate strategy system. The focus therefore is not only on identifying and selecting opportunities for product and service innovation, but also for business innovation: *"when new concepts are developed it always contains both the solution idea, e.g. module x/y/z, and the USP of the solution."* One good indication for the importance of innovation in the corporate strategy process is the team of business innovation that is an integral part of the corporate planning unit.

In TelEquip the *determination of a sustainable competitive position* of the enterprise in its environment is the key function of the corporate strategy system. The main emphasis therefore is given to continuously analysing markets, competitors and especially customers. As there are other competitors in the markets with similar strategies (systems integrator strategy), the focus is on identifying business opportunities for customers that are currently suffering, i.e. finding opportunities with clear and short returns that do not require excessive investments. For example, as quoted earlier: *"for us, innovation means either greater customer benefit or a faster return on investment."*

The strategic behaviour in comparison to competitors is described currently as 'defender', i.e. TelEquip has well established businesses and seeks to protect and nurture these; is risk averse and invests only in proven long term prospects. For the future, participants see a shift towards more proactive, risk seeking decisions in corporate development; future strategic behaviour is stated to be that of an 'analyser', i.e. TelEquip will try to rationally balance risks and returns by following and improving technological advancements (possibly made by others).

Therefore, the main focus of corporate development is on establishing and maintaining a 'differentiation' position with broad differentiation advantages. According to participants this is based in the ability ('acuity') of TelEquip to see the competitive environment clearly and thus to anticipate and respond to customers' evolving needs and wants. On top of this, the capability ('speed') to respond quickly to customer or market demands and to incorporate new ideas and technologies quickly into new products, as well as the capability ('innovativeness') to generate new ideas and to combine existing elements to create new sources of value will become even more important.

Thus the *dynamic positioning* in turbulent markets by identifying and realising (new) value opportunities for customers, based on existing and new technologies, lies in the core of attention in the dialogue of the corporate centre with various business units.

The corporate strategy system also fulfils a function in achieving synergy between the different areas of economic activity through *coordinating* (through centralised control or decentralised cooperation of) the units of activity of the enterprise. The main role of the corporate centre lies in coordinating the innovation management initiatives across the various business units. Moreover, the corporate strategy system fulfils a role in the transition towards a collaborative, knowledge sharing enterprise. In such an economic model, a culture of especially cooperation between the various units and teams across the enterprise is crucial. The corporate centre seems to focus mainly on identifying and capturing cross business synergies.

Finally, the CSS deals with preparing for and dealing with unanticipated events. The current strategic orientation towards the future is described by participants as 'adaptation to the future', i.e. speed, agility and flexibility for the recognition and utilization of chances in existing markets. This is clear evidence of the afore mentioned core function of dynamic positioning with a focus on organic growth through driven focussed innovations. For the future participants expect the orientation towards the future, to become more proactive and

become 'active creation of the future', which means playing a leading role in determining the competition rules in the sector for example through determining standards or actively generating needs. This relates to the earlier described vision to become a leader in the markets.

Apart from this, the CSS conducts a continuous early warning and identification of trends in the global markets. The gathering of trends and according scenario development allows the enterprise to learn about the future and deal with or even anticipate changes in the environment.

Corporate strategy system processes

The processes of the corporate strategy system are compared to navigational processes through a turbulent environment: *"It is really challenging for CEO's to be able to navigate through such stormy waters."* The processes of strategic corporate planning are defined as:

- *Trend scouting*: early warning, identification of weak signals, trend analysis and forecasting, among others;
- *Strategy formulation*: formulation of corporate strategies and coordination of the strategic positioning of the business units;
- *Innovation management*: development of new strategic solutions and business models;
- *Business transformation*: change management to realise the strategies within the single units;
- *Control*: strategic control of corporate development.

Trend Scouting:
- Early warning
- Identification of weak signals
- Trend analysis
- Forecasts

Strategy Formulation:
- Formulation of corporate strategy
- Coordination of strategic direction of business units

Innovation Management:
- New strategic developments and business models

Business Transformation:
- Change management to transfer strategies in different units

Control:
- Strategic control of the business

Alignment of strategic and innovation planning

Figure 5-11: Strategic planning processes at TelEquip

Apart from the early warning processes, strategic decisions are taken based on well founded and structured analysis.

Markets ⟶ **Strategy** ⟶ Regional concepts

Technologies ⟶ **Strategy** ⟶ Products

Customers ⟶ **Strategy** ⟶ Production
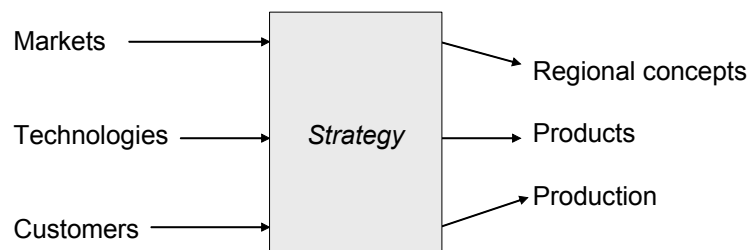
Figure 5-12: Structured strategic analysis

As depicted in the figure, *"a lot of information about markets is available in the units, also for customers. For technologies not so much is available. But so far, there have not been interconnected analysis between these various dimensions. One of the main tasks of the corporate planning unit is to conduct a connected analysis where the different influence factors are treated collectively."*

The activities related to strategic analysis are described by participants both currently and for the future as a process of 'formal search' in the environment for information and intelligence. The main reason for the importance of intelligence activities should be sought in the dynamics of the markets: *"concerning dynamics, complexity and uncertainty, the main point lies in identifying trends that are evolving and the actions one should take on them. This makes it important for analysts to stay alert, and they have a good position."*

Corporate strategy formation contains various aspects and is a result of both bottom up (from the business units) and top down (from the corporate centre) forces. Special attention however is given to product/market dynamics. This is reflected in the integrated business innovation process within the corporate planning. The nature of the strategy formation activities are stated by participants to currently be a mixture of a semi-conscious process and a fully conscious and controlled thought process. In the future, with the establishment of more routines in the central planning unit, the expectation is that the processes will become more controlled.

The ways in which decisions are made are both currently and in the future stated as 'political', i.e. several (groups of) key decision makers make decisions. This relates to a context, which has been described earlier, where a number of various actors always have to be involved for many crucial decisions.

The central planning unit takes an active role in the realisation of corporate strategies. Although not all decisions taken centrally are implemented, processes are installed of change management together with the business units. There is a team of people within central planning unit that focus on the realisation of change in the units. The nature of strategy realisation activities is therefore stated to be, currently and in the future, 'collaborative'. This implies that the focus is on involving management to get commitment from the start: *"concerning strategy implementation, not all centrally made decisions are realised the way they were intended (or not at all). The 'prescriptions' (from the centre) are to be seen as a collaborative platform and way of explicitation."* In other words, the realised strategy is not the same as the intended strategy. Through a continuous dialogue and interaction of the corporate centre and the business units, the strategy is realised.

The processes of keeping track of strategy realisation, measuring progress (against targets) and possibly correcting strategy are all part of the corporate strategy system at TelEquip. A significant group of people within the central planning unit are dedicated to strategic control of the development of business units. The focus is strongly on financial control, but also control of goal achievement (Balanced Scorecard) is part of the activities in the field of performance management.

People in the corporate strategy system

There are various groups of people involved in the strategy processes. First of all, the CEO of TelEquip (chairman of TelEquip board of directors) and his board of directors play a key role in corporate planning. The CEO is the direct superior of the corporate planning unit. From the corporate centre, within the CSS, there is direct contact to boards and planners within the different business sectors. The central corporate planning team is involved in daily cooperation and direction of different projects with different managers from the units. Moreover, the controlling responsibles from the business units are involved within the business control, i.e. operative planning, processes. In this way, together with the decision makers, the main people involved are 'specialists' for planning, innovation and control.

Zooming in on the central planning unit, it has approximately 50 employees within the team that is subdivided in following teams of specialists:

- *Business innovation*: 2-3 employees that are creative and broad-thinking (different background);
- *Strategy formation*: 8-12 employees;
- *Business transformation*: 10-15 employees that have an explicit consulting profile; employees, who are able to change things within the daily business.
- *Business administration*: 15-20 employees that have financial background: controlling, financial consulting (e.g. business cases), tools and methods, documentation of strategy.

In this way, there is an intensive involvement of people in the corporate strategy system both from the centre as in the units, and from managers as well as specialists. The recent establishment of a dedicated team in the corporate centre, reporting directly to the CEO, is just one indication of the formal ownership of the corporate level over the corporate strategy processes. Moreover, the amount of ownership and attention (e.g. in terms of their time) that top management has for the corporate strategy processes can be argued to be that of strong commitment as top management takes full responsibility for the processes and dedicate a significant amount of their time to strategizing. Not only corporate top management but also the management from the business units put in considerable time and effort in strategising.

Strategies are formed and realised by seasoned planners using latest management tools. Regarding the methods, instruments and tools to support strategic corporate planning, many of the well known strategic instruments are used in different phases. Linked to the various processes, following instruments are used among others:

- *Trend scouting*: scenario analysis, trend scouting, weak signals, quantitative and qualitative forecasting methods.
- *Innovation*: business model conception.
- *Strategy development*: different portfolio methods, lifecycle approach.
- *Business transformation*: knowledge management, change management.
- *Strategy control*: quantitative, financial control instruments.

Although the formalisation of the planning processes is recent, the managers involved form the centre and from the units are experienced. Moreover, the specialists involved are all professionals in their field.

The corporate strategy system possesses a strong ability to identify external signals, but a low ability to deal with these inputs in a flexible manner. Much emphasis is put on identifying and analysing various signals from the external environment. However, the ability to deal with these signals is limited. One reason is the strategy process itself, which involves finding compromises and brokering between various stakeholders. This delays decision making and acting on signals. Moreover, the posture of the enterprise is quite risk averse, which prohibits entrepreneurial and risk seeking fast decision making. Finally, it is just plain difficult to implement change quickly and act on impulses flexibly with such a big enterprise to steer.

5.8   Case study: MachOne

MachOne (fictive name) is a small company with a staff of 85 people in the automotive industry. More specifically, it is a supplier and is mainly active in the automotive parts and manufacturing industry. MachOne has advanced engineering, assembly and testing departments and a research and development group. MachOne designs and fabricates

equipment to test single automobile parts as well as pre-assembled systems, and to check mechanical, hydraulic or electrical properties.

5.8.1 Context

This section describes the external and internal environment of MachOne.

External environment

MachOne is operating within the broader context of the automotive industry, which is a mature industry that is currently growing. MachOne is a second / third tier supplier delivering unique solutions to its customers. Every machine it delivers to its customers is one of a kind (series of one). The main market of MachOne is rather dynamic and growing but also becoming more stable and mature. In line with customer behaviour and market maturity, the technological landscape of industrial automation and functional testing is dominated by advanced technologies. According to case study participants, all environment parameters have a quite constant high level of change, especially technology, competitors, markets and society. Therefore, technology is expected to grow even more in importance (this expectation is reflected in the relatively high R&D efforts). Especially changes in market and technology forces have a high impact on the business.

One challenge MachOne is facing is to keep up with the increasing demands of quality and variety and at the same time to remain competitive. MachOne considers the rates of competition within its industry to be high, which is natural in a maturing industry where competition is dominating.

MachOne has a number of relationships with stakeholders. With its suppliers MachOne has a number of longer term relationships. As the enterprise is focussing on its own core competencies of systems integration, especially in collaboration with strategic partners, MachOne expects the general intensity of collaboration to be higher in the future.

In the area of R&D, the enterprise already has an extensive network of collaboration. MachOne takes part of several European research projects and collaborates with national and local structures, such as research institutes and universities. Recently MachOne has been added to the official list of its countries' laboratories. MachOne houses a section of a research institute of industrial technology and automotion, which is involved in research and development activities about robotic and industrial automation areas.

Internal environment

According to participants MachOne is currently perceived to be in a growth stage, both in the areas of turnover and employees there has been an annual growth of around 15% over the past years.

The organisational structure, as depicted in the following figure, is functional and divided in a number of departments, such as R&D, marketing and production.

As can be expected in a technology-intensive enterprise, the R&D department has a strong influence on the overall value added of the enterprise. The primary process is one of order fulfilment (production of unique customer solutions). To underline the importance of knowledge workers in the enterprise, out of all employees around 25% hold a university degree (and 85% a diploma).
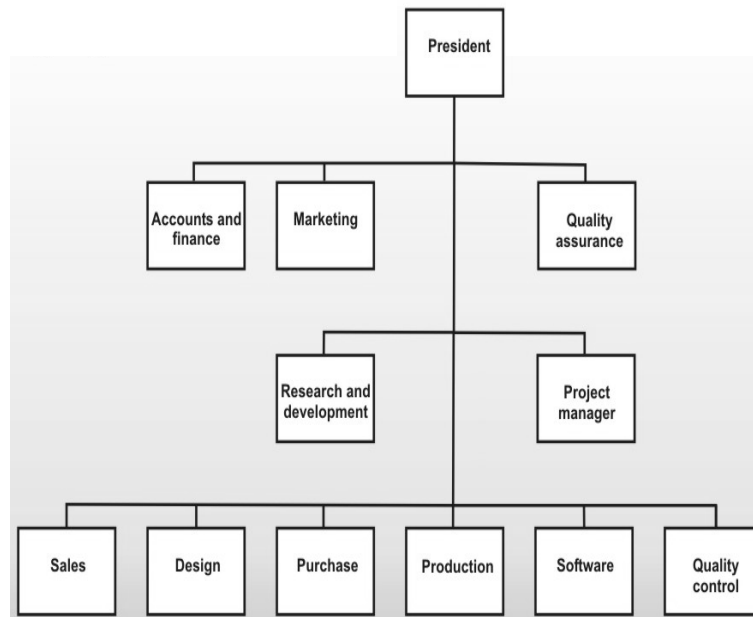
Figure 5-13: MachOne organisational structure

MachOne's philosophy is *"to apply creativity to production in order to supply customers with both up-to-date and innovative products"*. In accordance, MachOne management sees the company's core competence in the field of *"product personalisation capability and ability to conquer the customer confidence"*. Also problem solving skills, team work, *"horizontal brain storming"*, the ability to face the problems submitted by the customers and the ability to realise specific solutions in the process automation are important competencies.

Also due to the functional organisational structure, there are challenges in cross functional (cross department) collaboration and knowledge sharing. Especially the formal organisational structure, business processes and 'leadership' are mainly oriented on responding to customer demand and posses lower levels of proactiveness.

5.8.2   Corporate strategy system

In MachOne there is not a formalised corporate strategy function, as there is not one specific person, team or department that is responsible for the corporate strategy. The main strategic decision making authority and responsibility lies with the entrepreneur. On a corporate level, and throughout the whole organisation, much attention is paid to responding to customer demand. Other entrepreneurial tasks are taken care of by management.

MachOne is a customer oriented company with a functional organisational structure with a department for each of its main corporate functions such as R&D, marketing & sales and production. However, MachOne is in the process of reorganisation with one key aim of integrating technical and marketing departments into more entrepreneurial business focussed teams / departments. By doing so following corporate development goals are pursued: *"to increase customer care and become a stronger market oriented company by making better use of information about market and competitors and by organising a sales network; to standardize products and to reduce time and costs for customer specific solution development; to define the company identity; to create integration and connection between departments; to increase the responsibility sharing and the delegation process and to introduce work by objectives; to promote competence development by continuous learning*

by courses and seminars". Overall, according to participants, MachOne has a *"lack of mid-long term overall objectives; no company strategy is perceived within the departments"*.

Participants underline that they do not 'feel' the corporate strategy of their organisation. There is a lack of explicitly formulated medium- to long-term overall objectives. There is no explicit corporate strategy that is perceived within the departments. Objectives are set to be unclear and no strategy analysis is conducted formally. As one participant notes *"plans are not detailed enough to be a real good guide; only temporal modifications on plans"*.

As MachOne mainly sells customised solutions, its big customers heavily influence the commercial (and overall) activities of the company. In a reorganisation the idea is to *"redefine the customer management so that we can clearly define the company identity"*. MachOne wants to introduce the creation of company objectives and their explicit relation to the department objectives, in other words to introduce *"strategy sharing"*.

One focus is to search for new business opportunities and to enlarge the customer potential, so that *"we can be more independent from our big customers"*. MachOne overall direction of activities is strongly customer focussed. However, there is a need to focus more on cost (and time) reduction. The participants state that more formal planning could be beneficial to the company, especially in for example the areas of *"make or buy balancing"*, *"action plans"*, *"definition of well defined objectives and strategies"* and *"define internal competencies"*.

Also there are plans for diversification of products, mentioned are: *"creation of specialist division that can make standard products"*, *"give up working only on automotive field"*, *"spin-off creation on various areas"*, *"make a new division that produce cheaper products based on the competences of the company"* and *"diversify the products; make joint venture"*.

Currently, each department is responsible to formulate their own objectives. The process of formulating a commercial strategy is mainly established by personal relations with big customers. The overall strategic decisions are made by one person, i.e. the entrepreneur.

The new units of activity that will be shaped through technical and marketing department integration should establish some more formal processes of strategic analysis, especially related to customer, markets and competitors, as well as the sales network.

MachOne is also considering processes for *"creation and management of the spin-offs; internal organization for the external resources management"*. Also some analysis of feasibility of strategies and risk judgement should be set up. Participants also mention *"customer satisfaction analysis"*; *"introduction of collaborative forecasting processes"*; *"involve customers and suppliers"*; *"monitoring the customer satisfaction"*; *"results monitoring"*; *"manage the unpredictable business opportunities"*.

Capabilities for managing unforeseen events are regarded as crucial in MachOne's business. The main person involved in the (implicit) strategy formulation for MachOne is first and foremost the entrepreneur who takes responsibility for strategic decisions: *"strategy decisions made by one person"*. Moreover, the people (management team) with the relationships with the main customers have an important role in establishing the commercial direction of activities, as the commercial strategy is made by personal relations with big customers. Furthermore, each department is responsible for setting their own detailed objectives and according execution of work.

5.9   Case study: CoolSystem

CoolSystem (fictive name) is a systems supplier for the international automotive industry and is specialised in automobile cooling systems. CoolSystem is a leading manufacturer and supplier of original equipment for passenger and commercial vehicles and employs more than 15.000. The company invests well over 5% of turnover in R&D annually and has a large number of development and production sites around the globe.

5.9.1   Context

This section describes the external and internal environment of CoolSystem.

External environment

The broader external environment of CoolSystem is represented by the global automotive industry. Being a globally positioned enterprise, the forces shaping the industry worldwide have a clear and often direct impact on the groups' various activity fields. The automotive industry is well-known for its strongly connected supply chains. CoolSystem is a first tier supplier and is therefore strongly integrated in the global automotive chains. This implies among others that when big impact changes occur in the value chain they are directly felt, which makes the environment significantly volatile.

Over time, CoolSystem has made a gradual transition from a supplier of components to a provider of complete subsystems for the automobile. This goes hand in hand with the overall development in the automotive industry that more and more of the value added comes from (especially first tier) suppliers. The number of original equipment manufacturers (OEM's) has reduced steadily over time and the role of various levels suppliers has steadily gained in importance. This puts greater demands, e.g. in terms of technological capabilities and innovation, on suppliers like CoolSystem: *"the more automobile manufacturers reduce the depth of their value added and intensify outsourcing, the greater the demands on suppliers. The range of requirements is wide although the key success factor is consistent: integration."* Integration relates not only to the product (integration of components to form modules), but is certainly also translated to organisational aspects of integrating and coordinating a web of suppliers, customers and partners. First of all, CoolSystem requires strong cooperating capabilities with its customers: *"CoolSystem initially carries out overall development in close cooperation with the customer. … However, our service responsibility does not stop there: CoolSystem takes on overall responsibility for meeting cost targets and technical design specifications jointly established with customers."* Furthermore, CoolSystem manages a whole supply chain of suppliers in order to deliver the modules for its customers: *"(CoolSystem) is responsible for the efficient and purposeful processing of the whole value-added chain within the defined scope."* Thirdly, in order to be able to deliver innovative solutions in the future, CoolSystem has extensive partnerships for new product development: *"For some years we have been working intensively on a new level of integration: the development of large modules. … These new developments offer our customers advantages regarding reduction in costs, space and weight as well as new ways of simplifying assembly and logistics."*

The result is a strongly integrated and coordinated supply chain where additional capabilities (in addition to innovative and technological skills) of a first tier supplier like CoolSystem are required such as enhanced service skills, an effective supplier management system, the

integration of cooperation partners and sophisticated project management: *"important measures have already been taken to further refine our integrator capabilities."*

Internal environment

CoolSystem has been founded early in the twentieth century and over the years it has grown into a globally operating group, which is active in various fields of business. As depicted in the figure below, the main units of activity are the two product divisions and the customer centres. In addition, there are various regional companies and services & technology units. Thus a matrix structure with products and customers is formed.

Figure 5-14: CoolSystem collaborative matrix structure

The product divisions are divided into the main product lines. The customer centres are divided into the main customers worldwide. Most customer centres are dedicated to one customer: *"heart of the CoolSystem structure are the customer centers. They guarantee a closely interlinked partnership with customers in all technological, organizational and commercial areas. We work on the principle 'one face to the customer' to ensure optimum communication with our customers."*
The clear footprint of customers in the company structure seems natural for a first tier supplier. The structure of the company is thus oriented on the processes of value creation for customers. As a result, the units of activity related to the product lines and regional sites (as well as technology and services) need to work strongly together with the customer centres. In other words, a strong cooperation and aim for synergy between the various units of activity is required: *"each customer center coordinates strategies, costs and project issues with the product lines and plant locations involved. We have thus effectively optimized teamwork between the group companies along the lines of a global development and production network".*

Such strong focus on internal and external cooperation goes hand in hand with delivering technological innovation: *"networked cooperation with our customers and suppliers and a consistent innovative policy have made us what we are today."* CoolSystem is a clearly technology-intensive and even technology-driven company: *"our goal (is) to be technology leader."*

Globalisation is an important concept for CoolSystem. For one, this is reflected in the presence in various regions worldwide. But also, the company sees the expansion into geographical markets as one of the main cornerstones of growth and future development*: "we are expanding the CoolSystem and tapping new potential in the international markets."*

5.9.2   Corporate strategy system

The vision of the company thus combines technology leadership and customer orientation with a focus on globalization: *"innovation, globalization plus growth - our course into the 21st century."* In order to realise this vision, as reflected in the organisational structure, the CoolSystem puts strong emphasis on creating synergy between the units of activity (as well as in the extended web with customers, suppliers and partners). In this context, the corporate strategy system plays a crucial role in aligning the various units of activity and enabling their coordinated development towards the strategic vision.

Accordingly, the processes of corporate strategy development has both top-down and bottom-up elements. On the one hand, freedom of manoeuvring is left to the various units of activity. On the other hand, there is a continuous aim for creating synergy. Although systematically supported by numbers, the main discussions as part of the strategic corporate planning process are characterised by a more strategic, qualitative orientation. One core aspect of the corporate strategic planning process is the alignment of corporate and unit objectives and the formation of an overarching corporate strategy. The corporate strategy and objectives are translated into concrete measures. Unit managers define how to realise objectives and measures within their unit. The measures of the individual units of activity are then aligned with the overarching corporate objectives. The corporate strategy system in this sense plays a key role in aligning the strategic orientation of the various units of activity.

As described earlier, CoolSystem is a matrix organisation, which is structured by customer centres and product lines. The executive board stands above this structure, whereas every member of the executive board is responsible for (at least) one centre and one product line. On a corporate level, CoolSystem has a small formal team that has the organisational responsibility for supporting the executive board in conducting the strategic corporate planning process and enabling the formation of corporate strategy. This central department of corporate planning is a staff that is directly associated to the CEO and stands above the matrix organisation.

Main activities of the central planning team within CoolSystem can be divided into continuous/regular tasks and singular projects. As a *regular task*, the team executes a worldwide analysis of customers' satisfaction every three years. For this, middle and high management of customers is consciously chosen as interview partners. By doing so, CoolSystem tries to detect their position in relation to the competition. Also the goal management and alignment within the group is one of the continuous tasks of the team. The CoolSystem corporate planning unit tries on the one hand to support corporate objectives and strategy establishment, on the other hand to do conflict management when conflicts occur as a result of conflicting aims within the matrix organisation. Examples of *singular projects* within the CSS that the central planning team conducts:

- Development of a strategy for the after sales market: for this, an analysis of market and competition has been conducted.
- Development of product market strategies for single product lines.
- E-Business: integration of different smaller single projects into an entire programme.

Other *additional activities* that are conducted as part of the corporate strategy system are: support of innovation management; support of basic-, pre- and series development by systematic development and control of business plans; coordination of demand for cooperation & benchmarking and initiation of further actions; execution of benchmarks; and support in building up of new products and product fields, i.e. development of business plans. In this way the corporate strategy system in general and the central planning team are oriented on achieving as much synergy as possible between the various units of activity and coordinating their development towards a coherent corporate course of action, without interfering too much in the daily business operations of the units.

The corporate strategy system is thus relatively 'light' and aims mainly to align the overall strategic direction of the group as well as to enable as much as possible the cooperation between the various units. Accordingly, the central corporate planning unit is a relatively small area within the enterprise and defines itself as a contact or mediator for the different units of activity. Because of the technical orientation of CoolSystem, the technical background of employees involved in the corporate planning team is emphasised – ideally they should have a double qualification. Moreover, the people at the central planning unit should be pragmatic enough to convince and motivate the employees of the enterprise. Also experiences within the enterprise itself are an ideal qualification for new employees. Because of this, new recruits for the corporate planning team are mostly taken from the internal personal development programme. Employees of the planning team are often invited in other areas of the enterprise due to their great experiences. This in return leads to an increased employee turnover.

CoolSystem uses a number of systematic instruments to support the strategic corporate planning process, such as: portfolio technique; scenario technique; strengths and weakness analysis; benchmarking methods; and innovation cards (employees having new ideas are encouraged to think for themselves about possible applications & marketing and should develop a business plan). No software tools are used within CoolSystem to support strategic corporate planning.

5.10 Case study: InnoMobile

InnoMobile (fictive name) is a large and global automotive OEM (original equipment manufacturer). The company's R&D budget is just over 5% of turnover. InnoMobile has a small number of brands in its portfolio and is aiming for the high end of the market.

5.10.1 Context

This section describes the external and internal environment of InnoMobile.

External environment

The external environment of InnoMobile is set by the broader context of the automobile markets, which is considered to be in a challenging phase: *"In 2003, economic conditions prevailing on some of the world's automobile markets were difficult. At the beginning of 2003,*

the global economy was still experiencing low growth rates. Although the situation picked up during the course of the year, the overall growth rate for the full year was still only modest."

According to a survey [9] of the automotive sector, there are powerful forces at work that could profoundly change the industry. *"One is the fragmentation of the market, leading to lower production runs. Another is dissatisfaction with the costly system of building cars for stock, not to order. A third is innovative modular construction, in which more of the car is put together by parts suppliers. And further ahead, a fourth force could be a switch to electric cars with electronic and electrical rather than mechanical controls."*

Another survey [10] from the same year found that the main trends in the automotive sector are related to: brands and brand differentiation; customer integration through attractive product portfolios and downstream business; new markets and globalisation; long term conservation of employment and competences; partnerships and networks.

Overall, the automotive industry is a mature industry and has been consolidating almost since its formation stage: *"In the late 1920s there were 270 car companies, mostly in America, before the Big Three gobbled them all up. Today, with the industry fully mature, there are only seven big groups and three smaller ones."* [Economist, 2001] And although there are many driving forces of change, overall the sector is considered to be in a process of evolutionary change: the structural change of the automotive value creation system is evolutionary, not revolutionary. [Study Mercer and Fraunhofer, 2004]

Within this context, *"InnoMobile is forced to respond to the increased competition on a number of fronts"*. InnoMobile has focussed on building its brand and realising a high end strategy. This strategy seems to be paying off; the enterprise has a clearly recognised position in the market and is profitable with good margins when compared to the industry average.

Internal environment

InnoMobile exists for a long time and currently its portfolio consists of automobiles (with a number of luxury brands) and some related business, e.g. financial services. According with its high end strategy, InnoMobile is aiming to establish distinctive competencies, for example with a talented workforce, supplier networks and productive manufacturing systems. In terms of the value proposition, the main focus is on delivering superior, top level products. Since some years the enterprise is on a diversification strategy through organic innovations.

The combination of top brand products and a diversified growth strategy implies an interesting corporate strategy, which combines a number of building blocks, such as: increasing sales volumes, while maintaining luxury image and technology leadership; grow from own core competencies; expand into new market segments with innovative new products; deliver more innovative products, while keeping time to market.

In order to realise this strategy, there are at least two driving forces behind InnoMobile corporate development. First, the role of partnerships is crucial in all areas of work, for example the CEO mentions that *"cooperations with other companies, rather than mergers and takeovers, also will keep InnoMobile growing and competitive. The goal was to help the company 'to become more faster, more flexible and more agile".* Secondly, continuous and focussed product and technological innovation are a driving force, whereby the goals are set

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[9] The Economist Survey 2004 *"CAR INDUSTRY: Perpetual motion".* In: The Economist, Sep 2nd 2004
[10] Verband der Automobilindustrie: „*Future Automotive Industry Structure 2015 – die neue Arbeitsteilung in der Automobilindustrie.*" A study by Mercer and Fraunhofer, 2004

for innovation management: *"provide USP's (unique selling points) by market launch; breakthrough innovations every year; and concept cars every year."*

5.10.2 Corporate strategy system

The corporate strategy function of InnoMobile is represented in a planning department that reports directly to the board. The main tasks of this department within InnoMobile are:

- Creation of a long term corporate plan;
- Consolidation of strategic corporate decisions;
- Once a year: creation of a corporate plan, in which top down policies (measures) are matched with bottom up status;
- Adjustment of strategic corporate planning with operative resources planning.

InnoMobile defines qualitative and relatively abstract principles in a so called 'bible'. For example, in this 'bible', principles concerning collaborations with other enterprises are defined.

The corporate planning department is integrated in the overall organisational structure as depicted in the following figure. The team is part of corporate headquarters and reports directly to the board of directors.
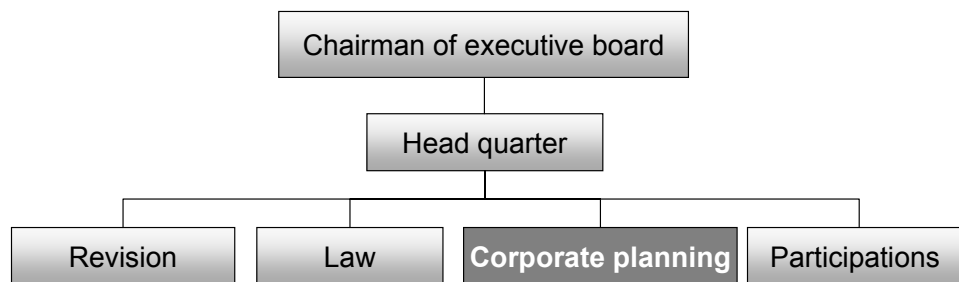
Figure 5-15: Corporate planning department within the overall InnoMobile structure

Corporate strategic planning deals with seven fields of strategic relevance, such as: product, public/employees and shareholders. The seven fields are not horizontally dependent on each other. However, there is a goal system within the seven strategic fields, which is broken down on five different levels: level one matches the corporate level, up to level five that matches the group leader level. However, the connection between these different levels of the goal system is not firmly interconnected (the most linked area on all levels is the area of production). On each level, a target level of achievement is defined within and is analysed relatively, i.e. in comparison to competitors. Examples for targets on the first level (corporate planning) are adherence to delivery dates and agility (as defined by the combination of flexibility and speed).

Furthermore, the corporate strategy system has processes related to:

- *Quantitative planning*: this concerns the consolidation of corporate indicators;
- *Qualitative planning*: this contains themes for which it is considered crucial by InnoMobile to take a position and make a decision statement;
- *Complete results and financial planning*: here key data such as indicators related to e.g. turnover, employees, results, cash flows, etc. are prepared.

Also the analysis and results of the processes for product (market) planning flow into the corporate planning processes.

Financial planning is divided into:

- Premises of factories occupancy (production capacity), purchasing, production ramp up, pricing (of products), global economy.

- Bottom up balance of status, where gaps between achievements versus goals & targets are made transparent and counter measures are defined.
- Detailed planning is done decentralised, within the following 3 month after the annual strategy meeting.

Long term planning is divided into a 6-year planning horizon and a 6-year trend forecast. It is rolling. Operative planning is concerned with the following year relative to the actual point of time; the goals of operative planning are derived directly from the long-term planning processes.

The staff of the corporate strategic planning department consists of around 12 employees (incl. head). It has skills in the areas of: finance & controlling (3-4 employees); marketing & sales (2-3 employees); and engineering (4 employees). Most of the team members are graduated engineers and economists respectively with double qualification, mainly PhDs. All employees have perennial enterprise experiences. This is considered positive because structures, ways and forms of communication are known. Further development of employees is fixed: after a 3-4 year stay in strategic corporate planning, employees usually go to practice a management function in an association abroad. The head of strategic corporate planning decides about the balance of corporate planning and resource planning within a board of resource supervision (e.g. investments, production facilities and estates).

Numerous methods, instruments and tools are used to support strategic corporate planning, no application of special methods.

In terms of cultural traits, there is a strong emphasis on human talent and collaborative teamwork. Moreover, the company management style and culture is based on informality, empowerment, network building and regular performance measurement.

5.11 Case study: DriveSupply

DriveSupply (fictive name) is a first tier, global supplier to the automotive and related industries. DriveSupply has more than 50.000 employees. DriveSupply products are complex technological systems and can be found in almost all types of vehicles worldwide. DriveSupply's core business is with the automotive industry. It has a decentralised, customer oriented organisation and is truly global with around over 100 production locations globally.

5.11.1 Context

This section describes the external and internal environment of DriveSupply.

External environment

DriveSupply is active in various industries worldwide. DriveSupply's core sectors are to supply to manufacturers of passenger cars and light commercial vehicles, heavy trucks and buses, and also off-road machinery (agricultural tractors and construction machinery). The external environment that DriveSupply is confronted with is set by the dynamics in these sectors. Moreover, being a global company, DriveSupply is affected by worldwide economic, societal and technological developments. The developments in the different sectors and regions lead to significant levels of volatility of external changes that the enterprise has to cope with.

Figure 5-16: Global reach of DriveSupply – worldwide locations

As depicted in the figure above, DriveSupply is operating geographically highly dispersed. This extensive spread of regional presence is a direct result of the long term strategy of globalisation that DriveSupply is pursuing. Being a supplier to worldwide operating organisations, such as e.g. automotive OEM's, it is strategically important to be close to the customer's operations: *"the worldwide network of development and production locations offer DriveSupply customers optimum products and services."*

The largest part of turnover is generated in the automotive industry, where it does not hold a top spot. Although clearly not all automotive suppliers are active in the same areas of business as DriveSupply (product-wise), the number of competitors together with the advanced maturity of the automotive industry leads to intense competitive pressure. The position of DriveSupply within the global supply chains is based on a strategic orientation of optimising customer value.

Internal environment

DriveSupply is a technology-intensive enterprise with a long heritage. It has grown and developed into a mature enterprise with diverse interests within the overall scope of mobility: *"Worldwide, DriveSupply products make a major contribution to mobility"*. The DriveSupply structure is currently divided into a number of divisions, regions, business units and a sales & service organisation.

DriveSupply has five different divisions that all develop and produce different subsystems for the automobile. Each of these divisions has various business units. Apart from these main divisions, there are four smaller sepcialised business units. Furthermore, there is the sales and service organisation with over 20 companies and representative offices worldwide. Also, DriveSupply is involved in technology joint ventures.

The overall structure with its wide diversity of units of activity is the result of the corporate strategy of *'customer value through leading technology, quality and services'*. This orientation of delivering customer value is reflected in a number of core principles of corporate development: *"core competencies, innovation, development partners, complete vehicle competence, system integrator, component specialist, global and flexibly active"*. The structure is decentralised in the sense that the different business units have entrepreneurial responsibility (and close proximity) to its customers: *"DriveSupply's decentralized corporate structure permits a high degree of market and customer proximity."*

As mentioned, the global approach is a key characteristic of the enterprise's positioning: *"DriveSupply is a leading worldwide automotive supplier … DriveSupply will continue to*

further expand the already established market position." In terms of corporate development, growth is pursued especially in terms of technological innovation: *"DriveSupply continues to pursue a strategy of expanding its international market position through innovative and high-quality products. For this reason, large investments in new technologies, products, and locations"* are necessary. This is translated into investments of around 6% of the annual sales volume. Most of the R&D is conducted within the various business units with the intention to have customer oriented innovation, i.e. product development is organized directly in the operative divisions and business units and it is close to the customer: *"the standards for all DriveSupply development activities are set by the benefits to our customers - vehicle manufacturers and users."* Corporate (central) R&D is focussing more on longer term and basic research capabilities.

In summary, DriveSupply is a supplier primarily to the automotive industry with an extensive portfolio of units of activity. It has a broad global presence and within its decentralised structure performs activities with strong customer orientation while aiming for technology leadership.

5.11.2 Corporate strategy system

The corporate strategy system involves management (and their staff) on two levels, the corporate centre and the units of activity (divisions and business units). Accordingly, as depicted below, the strategic planning processes take place on two levels – on the corporate level and on the unit level.
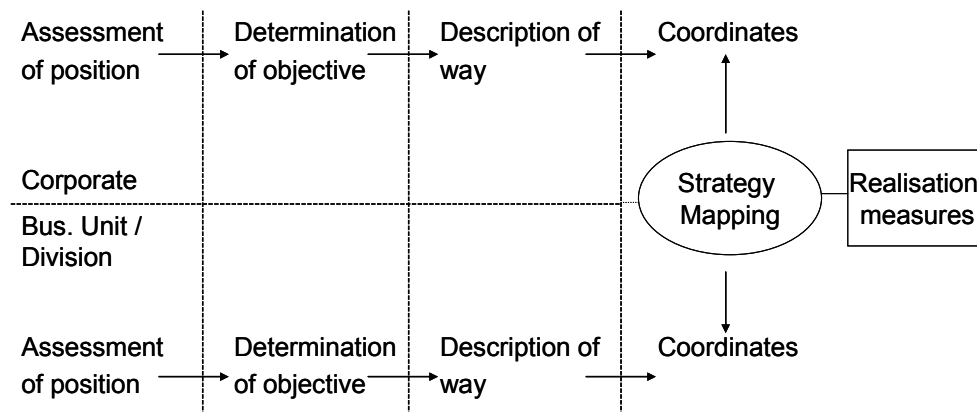
Figure 5-17: Corporate and business planning processes at DriveSupply

The corporate strategy focuses on the direction of development for the DriveSupply, but also includes statements about the various divisions and business units. The corporate strategy mainly contains a portfolio of market share and market growth, covering all the units of activity. Furthermore, a concise description of the strategy ('short word of strategy') is given for each unit of activity.

During the processes of corporate strategy formation, as depicted in the follwing figure, a so called strategic frame is developed. This strategic frame serves as orientation for business strategies development and particularly tries to answer the following questions:

• How is DriveSupply positioning itself?
• What strategic direction should DriveSupply follow?

This should guide the corporate strategy, i.e. the portfolio composition of units of activity.
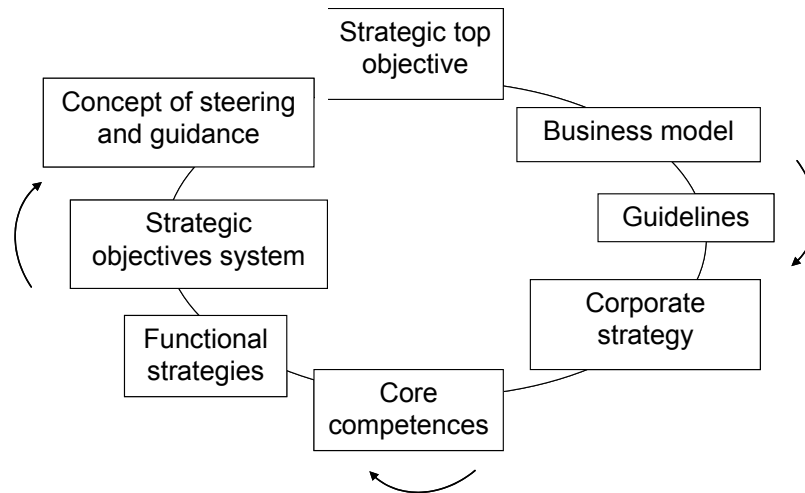
Figure 5-18: Strategic frame at DriveSupply

The development of business strategies does not directly result from the corporate planning process, but is done in a decentralised manner in the business units and divisions. It takes the set boundaries, as provided by the strategic frame, as overall orientation.

The basic planning process model that is then followed in the various units of the DriveSupply looks as follows.
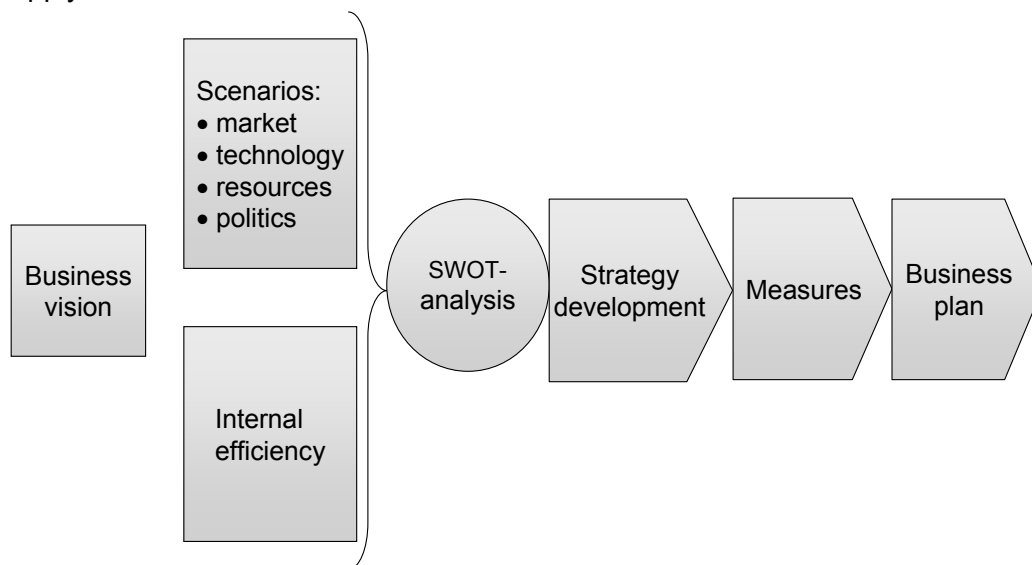
Figure 5-19: Basic planning processes at DriveSupply

The business vision is comparable to the short word of strategy (as formed in the corporate strategy cycle) and is oriented within the strategic corporate frame. Following this principal planning model, the business plan is formulated for each business unit once a year. It has a horizon of 5 years, whereby 2 years are operatively planned and milestone data are planned for another 3 years. These business plans of the divisions and business units are taken as an input for the detailed corporate strategy.

As mentioned earlier, the divisions and business units are organised in a highly decentralised manner. The board of management (i.e. the corporate centre) acts as a kind of management holding, which steers the development of the entire corporation. Therefore, entrepreneurial leadership and responsibility lies mainly in the hands of the units' management.

In this way, the corporate strategy system aligns planning processes on two levels. One level is the business unit level, i.e. the level of entrepreneurial strategy development. The other level is the corporate level, i.e. the composition of DriveSupply's overall orientation. On the corporate level, the board of management is supported by two organisation units that support the corporate strategic planning processes. One is the team of corporate development and the other is a team that is part of corporate controlling. These teams are formally assigned for driving the corporate strategic planning processes. The 'corporate planning & reporting' unit (as part of corporate controlling) drive both strategic and operative planning activities within DriveSupply. The main tasks of this team are: coordination of planning activities; creation of a corporate strategy; continued advancement of corporate planning; identification of success factors; development and advancement of the corporate strategic frame.

The corporate strategy system processes, i.e. activities related to corporate strategy formation and realisation, are organised in an annual process cycle. This annual planning process model can be depicted in the following way.
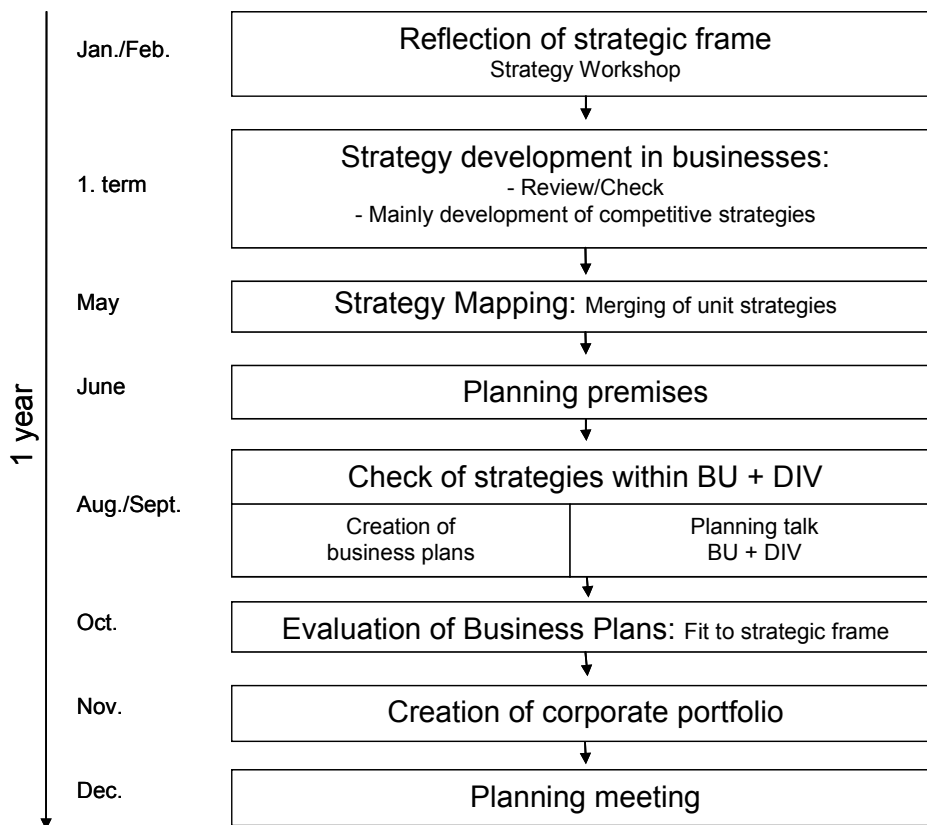
Figure 5-20: Detailed annual corporate strategic planning process at DriveSupply

This process model shows both the timing per year, as well as the interaction between the corporate centre ('management holding') and the different subsidiary businesses.

There is a variety of instruments and methods that are used within corporate strategic planning, such as for example: portfolio technique; scenario technique; SWOT analysis; EFQM model; value based management; balanced scorecard (in preparation); continuous expert rounds - experts from technical and market related sectors meet every second or third month to discuss actual and future developments. This institution serves as a brain pool and an early detection and warning system.

5.12 Case study: GlobalCar

GlobalCar (fictive name) is one of the world's leading automotive companies. GlobalCar has a broad portfolio of brands. In addition, the company offers financial and other automotive services.

5.12.1 Context

This section describes the external and internal environment of GlobalCar.

External environment

The broader context of GlobalCar is set by the global environment of the automotive industry. With a large number of production locations in various countries and (sales) activities all over the world, GlobalCar is a truly global company. It therefore has to deal with global factors shaping the industry and economy. A number of such key challenges that the enterprise has to deal with relate to *"increasing threats of saturated markets, global competition, fluctuating economic influences and rising technological standards"*. The volatility of the automotive industry seems to a large extent to be driven by *"the auto industry's intense competition, which has made efficiency and cost control absolutely essential."* [IBM, 2005] Apart from the intense competition, the industry is also characterised by the densely connected supply chains (see e.g. CoolSystem case study).

GlobalCar has faced the threats and challenges of the automotive industry by becoming a global company covering all segments of the automotive market. The enterprise has diversified into covering a broad diversity of (product and geographical) segments of the automobile market. Driving these developments has been the vision of a global company.

GlobalCar's approach to deal with the challenges of the external environment can well be summarised as that of a 'holistic approach' to business: *"ours is a holistic approach to business … we are extremely well positioned worldwide with our … brands, and have products in nearly every market and market segment."* [annual report]

Internal environment

GlobalCar is a mature company with a long heritage covering much of the automotive industry's development and maturisation processes. The current organisation of GlobalCar is a result of its four strategy pillars: a global presence, a strong brand portfolio, a comprehensive range of products and leadership in technology and innovation. The logic behind the first pillar is that *"a global presence is necessary, as only a company with a worldwide reach can use to its advantage the worldwide growth potential on a long-term basis. … In addition, the global presence serves to reduce the company's susceptibility to regional market fluctuations."* [CEO from GlobalCar] In other words, a diverse spread in activities is expected to be more robust to the fluctuations of a volatile environment. The second pillar of a strong brand portfolio has resulted in the broad variety of brands and broad coverage of market segments. Therefore, *"the aim is to achieve the best possible results for GlobalCar through optimal market coverage."* Optimal market coverage in a sense relates also to the third pillar of strategy, namely the comprehensive product program: *"we are able to offer virtually any customer a product tailored to his or her individual requirements."* The logic behind offering such a broad product spectrum is that growth potential in the premium segments is expected to be limited *"since exclusivity and mass volume are contradictory by*

nature". Moreover, the luxury segment is becoming increasingly competitive. According to GlobalCar more growth can be pursued in the volume markets: *"the volume market offers great potential for further increases in corporate value."* Finally, the fourth pillar of the GlobalCar strategy has to do with innovation: *"Innovation has always been and continues to be our greatest strength. In the automotive industry, coming out on top is all about having the better product."*

As also observed in the other cases in this industry, the automotive industry is technology-intensive and requires significant investments in R&D. GlobalCar has an annual research and technology expenditure of over 4 % of turnover. There are a number of critical success factors for managing technology and innovation in GlobalCar. One of those reflects the critical role of innovation in the enterprise, namely the strong and direct integration of innovation management into the corporate strategy.

GlobalCar is working hard at integrating the various operations and achieving synergy between the areas of activity. One key instrument for achieving this has been the installation of a committee that aims for integration in the areas of brand & product portfolio, technology, production & procurement, sales & marketing and strategic alliances. However, the depth of integration is limited: *"we adhere to the principle that only such parts are shared which are non-essential in defining a brand's character"*. GlobalCar is also focussing on becoming a more responsive company by breaking down some of the corporate silos: *"GlobalCar knew that competitive strength in today's dynamic global auto industry came … from the ability to adapt the business quickly to changes in its environment"*.

In summary, GlobalCar is a mature and large enterprise that covers a diverse range of business segments in the automotive industry. It follows a four pillar strategy and is investing significantly in innovation. Moreover, there is a continued focus on realising synergy the various corporate units and becoming a more responsive organisation.

5.12.2 Corporate strategy system

Corporate strategic planning within GlobalCar takes place on three levels, see also the figure below. In mixed planning teams there is continuous work on actual strategic themes. These themes are consolidated into the most important challenges on the level of business units and are finally integrated into an overarching strategy on the corporate level.
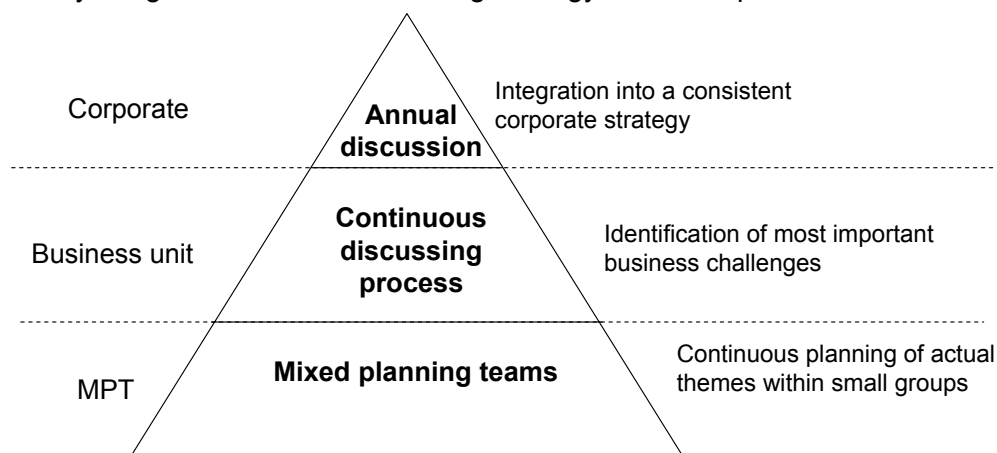
Figure 5-21: Three levels of strategic planning at GlobalCar

The corporate strategic planning process within GlobalCar is divided into a strategic and an operative part. The strategic part is less focussed on numbers, but more qualitative in nature and addresses central aspects such as:

- Strengths and weaknesses profiles;
- Product market portfolios;
- Coordination and integration of functional and divisional strategies;
- Establishment of strategic objectives;
- Aggregation of a joint strategic position of the enterprise;
- Guidelines concerning the corporate operating results.

On the other hand, the main function of operative planning processes is the implementation of corporate strategy and the coordination of medium term planning. Therefore, the operative planning process is based more on numbers than the strategic planning process and results in a consistent corporate plan and in the corporate budget. The planning horizon of strategic planning varies from unit to unit. While ten years are common within the automobiles sector, there is only up to 3 years planning in the services sector. Financial basic data are planned within a horizon of 3 years.

Within the corporate strategy system, the central top management – the board of management – is the key decision making authority and takes clear responsibility for the corporate planning processes: *"the sole responsibility for the management of GlobalCar lies with its board of management. This is responsible for managing, coordinating and controlling business within the framework of the objectives it has specified for GlobalCar."* The board of management has responsibility of developing and implementing the corporate strategy (the *"board of management … identifies and develops strategic planning for the company and coordinates this with the supervisory board"*) and its duties, among others include a preparation of the annual plan and budget, the setting up a risk monitoring system and preparation of the annual financial statements.

In executing this task, the board is supported by centralised departments. The main activities related to the 'strategic part' of planning are allocated to a central department. Within the overall organisational structure of GlobalCar, the member of the board who is responsible for planning directly shelters the department of corporate strategy. There is also a department of controlling that is responsible for the operative parts of the corporate planning process. The overall planning process has a period of one year, whereby more 'strategic' planning prevails in the first semester. The second semester is dominated by operative planning, which builds on the outcomes of the 'strategic' work.
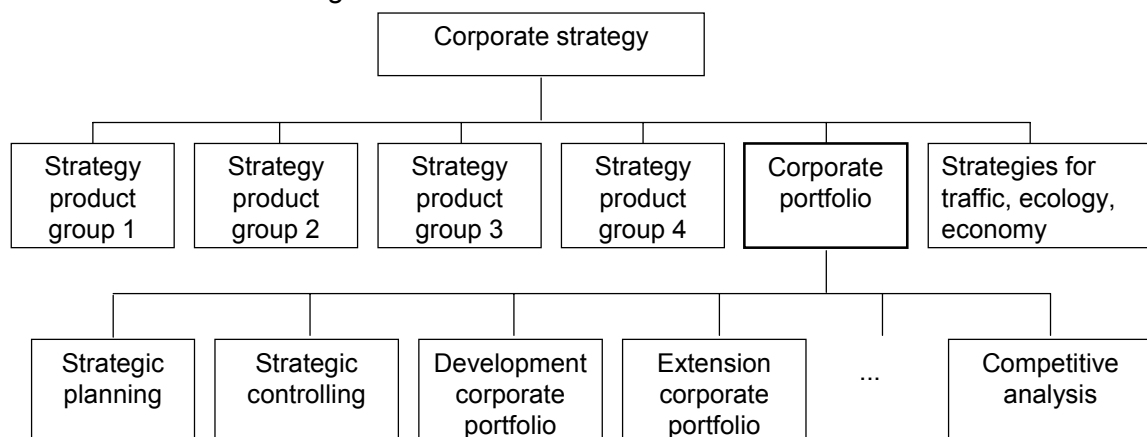
Figure 5-22: Organisation of the corporate strategy department at GlobalCar

The central corporate planning unit is divided in six departments, as depicted in the figure above. Their main tasks within GlobalCar are the creation of a consistent overall corporate strategy and thus the integration of different division strategies. The department of corporate

strategy has to identify acute conflicts of interest occurring between business units and the centre and to find a solution.

Thus the main tasks of the corporate strategy system within GlobalCar are the creation of a consistent total corporate strategy and the integration of different division strategies. The corporate strategy system supports business units to develop strategies in a continuous cooperation. Also, the department that is responsible for corporate strategy (the corporate centre) identifies acute conflicts of interest occurring between business units and the centre and finds solutions. The central planning unit's function is therefore less to create and analyse long term hypothesis and scenarios, but more to stay close to reality. The department of corporate strategy acts as a mediator and a compensating entity within projects and can temporally play the role of project driver and leader until the business units take over the projects. Another important function is the annotation and evaluation of decisions, which are submitted to the board.

The early phases of corporate strategic planning (the first semester) are dominated by qualitative planning information, which deal with specific strategic themes. Within later phases a shift towards quantitative information and cooperation with operative planning takes place. The process steps taking place within *corporate strategic planning* are: strategic dialogue; preparation of strategic business discussion; strategic business discussion; corporate strategy meeting; and strategic dialogue (debriefing). *Additional processes* of the corporate strategy system are: determination of final planning premises; implementation; preparation of operative budget discussion; operative budget discussion; approval of the board of management; and meeting of the supervisory board. Previously, cash flow analysis has been used for strategic planning and financial measures for operative planning. Currently, one regards the value added of corporate parts, operating profit and net assets. There is a hierarchy of key figures that connects operative and strategic planning.

The corporate strategy system plays a role in strategy realisation, where the central planning unit acts as a mediator and a compensating entity within projects and temporally plays the role of project driver and leader until the business units take the projects.

Although the corporate centre (central top management) takes clear responsibility, the company management on all three levels is directly involved in corporate strategic planning at GlobalCar. Common work with business units play an important role, because integration of different units' strategies is one of the functions of corporate strategic planning within GlobalCar. The functional strategies are worked out together with the units and are handed to the board. This common work is done in mixed planning teams (with representatives from corporate, division and business units), which consist of 3 persons each.

The business unit strategist leads this team and has a strong position within the team. But the corporate strategist has the function to comment the developed strategy submission for the board. Because of this she/he also has a strong position.

To exemplify the intensity of involvement in the corporate strategic planning processes, the following can be said about people in the corporate strategy department. The department of corporate strategy consists of more than 50 employees. Employees need to have great autonomy and high social competencies, because one of their tasks is to resolve conflicts between business units and corporate. There is a strong fluctuation of employees to guarantee a permanent exchange between business units and corporate and to foster cooperation. It is important that employees of corporate strategy are regionally close to the business units. Close cooperation is very important to foster mutual confidence. A wide variety of very different instruments are used to support strategic planning within GlobalCar.

5.13 Summary: initial reflection on case studies

In this chapter we have described the external and internal environment, as well as the corporate strategy system of twelve case study enterprises. The case studies were selected using theoretical sampling criteria (see chapter 4) and they represent six theoretical groups: small single business enterprises from the ICT, professional and automotive industry; large multibusiness enterprises from the ICT and automotive industry; as well as a network organisation. As was expected, the case studies do indeed display a wide ranging and rich variety of corporate strategy systems in practice. We have seen enterprises with practically no formal or organised arrangements for the corporate strategy systems; enterprises where only the entrepreneur with his managers discuss informally about the future of the company. In contrast, we have also seen enterprises where many different groups inside of the whole corporation participate intensively in cyclical planning procedures; enterprises where a range of strategic decisions are taken in annual planning meetings and processes. We have also seen big differences in the role that the corporate centre plays in the corporate strategy system: in some cases a central planning unit directs and steers the units of activity; in others, a small team is mediating conflicts between units of activity; other cases have the units working strongly together inside the corporate strategy system. Also the involvement of top management and employees is practised in very different ways. Of course, these are just some examples of the rich spectrum of corporate strategy system and context that we could observe.

What is important to note at this point, is that the differences between the strategy practices truly cut across the theoretical groups of cases. We can clearly observe that the differences between cases can not be solely linked to the dimensions of company size and KIE category. Small enterprises in the automotive, ICT and services industry might share some similarities (e.g. informality of decision making, no planning department), but there are also many differences. For example, one small enterprise can involve practically all employees in strategic discussions (e.g. VERYSoft), whereas others have only the entrepreneur thinking about the course of action (e.g. MachOne). Also, the functions that corporate strategy systems play seem to differ strongly, independent of size or category. In other words, the classification of KIE according to the two dimensions was helpful to provide a true spread in the case practices. However, they are not detailed enough to provide a transparent classification scheme for the population of KIE. Nor does it provide deep explanations why corporate strategy systems are formed the way they are.

We therefore need to have a much closer look across the cases in order to better understand what the main differences are between them. In the following two chapters we will conduct a cross case analysis along the two phases of configuration construction. With the rich variety and appreciation of the corporate strategy practices in the twelve case study companies in mind, we can now proceed to the next chapter where we will focus our attention on developing a robust classification scheme and provide a synthesis on the functions and processes that a corporate strategy system can fulfil in a knowledge-intensive enterprise.

6 Cross case analysis: functions, processes and properties

This chapter provides an overview of the cross case analysis that is conducted in order to determine the properties of the context and the corporate strategy system, as well as the functions and processes that a corporate strategy system fulfils in knowledge-intensive enterprises. After an introduction on the procedure followed (paragraph 6.1), the focus is on properties of the external envirnonment (paragraph 6.2) and the internal environment (paragraph 6.3). The proceeding three paragraphs discuss the corporate strategy system. The first of these three (paragraph 6.4), is about the possible functions of the corporate strategy system. The processes of the corporate strategy system are discussed in paragraph 6.5. Finally, paragraph 6.6 aims to come to the properties of the corporate strategy system.

6.1 Introduction to analysis determining functions, processes and properties

As was highlighted in the research methodology chapter, the cross case analysis for constructing configurations consists of two main phases. This chapter describes the first of these two phases: the exploration of CSS functions, CSS processes and properties of both corporate strategy system and its context. This phase of the research process is conducted in order to answer the following subquestions that have been posed at the outset of this research:

- What distinctive *properties characterise contexts* of knowledge-intensive enterprises?
- What *functions and processes* do corporate strategy systems fulfil in KIE?
- What distinctive *properties characterise corporate strategy systems* in KIE?

A property is described (see chapter one) as a distinguishing characteristic or feature of a system, i.e. the CSS or its ecosystem (the context). Properties are the variables of this research. The variables (and their possible values) are building blocks for constructing the configurations, i.e. properties are the classification criteria for constructing the typology of corporate strategy systems in knowledge-intensive enterprises. In order for a property to qualify as a 'good' property, it needs therefore to be a relevant classification criterion. A classification criterion is considered relevant when it is, on the one hand, representative of the whole population of corporate strategy systems in knowledge-intensive enterprises and, on the other hand, provides a way to distinguish between various representatives of the population. In other words, a property needs to describe an important and relevant feature for all knowledge-intensive enterprises and their corporate strategy systems. Secondly, the property needs to be a good scheme for distinguishing and classifying the diverse corporate strategy systems and knowledge-intensive enterprises. The properties point to essential characteristics that all KIE and CSS exhibit. The values of these properties make the distinction between the various CSS and KIE. Along this logic, the cross case analysis for determining functions, processes and properties follows a logical sequence of steps. This sequence is depicted in the following figure, and will be described using the example of a CSS property, i.e. 'corporate strategy format'.
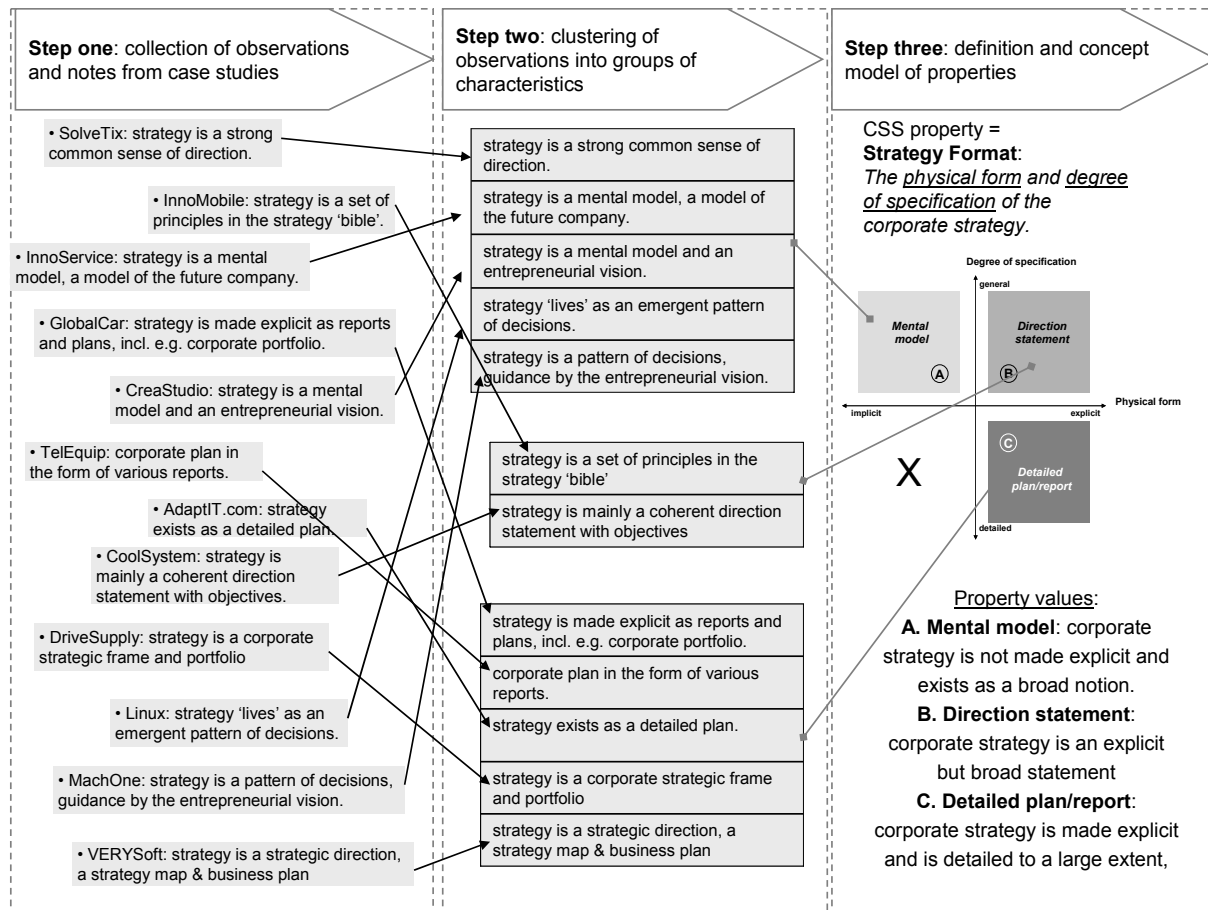
Figure 6-1: Exemplary conceptualisation of properties (strategy format)

In a first step, the notes and observations of each individual case study are collected (in an Excel table). These observations relate to characteristics of the corporate strategy system and the external and internal environment of the case study enterprise. For example in the case study of CreaStudio it is noted that an explicit corporate strategy does not really exist, but the strategy is a mental model and an entrepreneurial vision. In another case study, i.e. of InnoMobile, the corporate strategy is embodied in the form of a set of principles in their so called strategy 'bible'. And again in another case study, i.e. AdaptIT.com, it is observed that the corporate strategy is formulated on a detailed level into a reported plan. In the same way, similar observations for the other cases are collected as well.

In a second step, all of these individual observations are compared and clustered into groups of related characteristics, again using the Excel tool. An example is depicted in the figure above. For this specific example there are three groups of similar characteristics: one group where the corporate strategy does not exist in a physical explicit form, but is more a mental frame of overall direction; in a second group the strategy is made explicit in the form of a (rather short) direction statement; in a third group the corporate strategy is explicitly described in a detailed report. In this way, individual observations of all the case studies are compared, clustered and condensed in groups of similar characteristics. Actually, this implies that the cross case analysis is done 'in a horizontal way', meaning across the case studies similar characteristics are identified, thus abstracting from the relationships of characteristics within an individual case. By the use of data tables (Excel sheets) it is made easier to deal with the large amounts of data.

In a third step, the main abstraction is conducted moving from the empirical evidence to a conceptualisation. First of all, comparing all the clusters of observations, the property that relates to this data cluster is defined. For the example used here, the property is named 'corporate strategy format' and is defined as 'the physical form and level of specification of the corporate strategy'. For each property a conceptual model is constructed by using the matrix format as depicted in the figure below. The basic format of the matrix comes from the scenario technique (see chapter 4). This format is preferred because it provides a transparent and logical format for conceptualising distinctive characteristics.
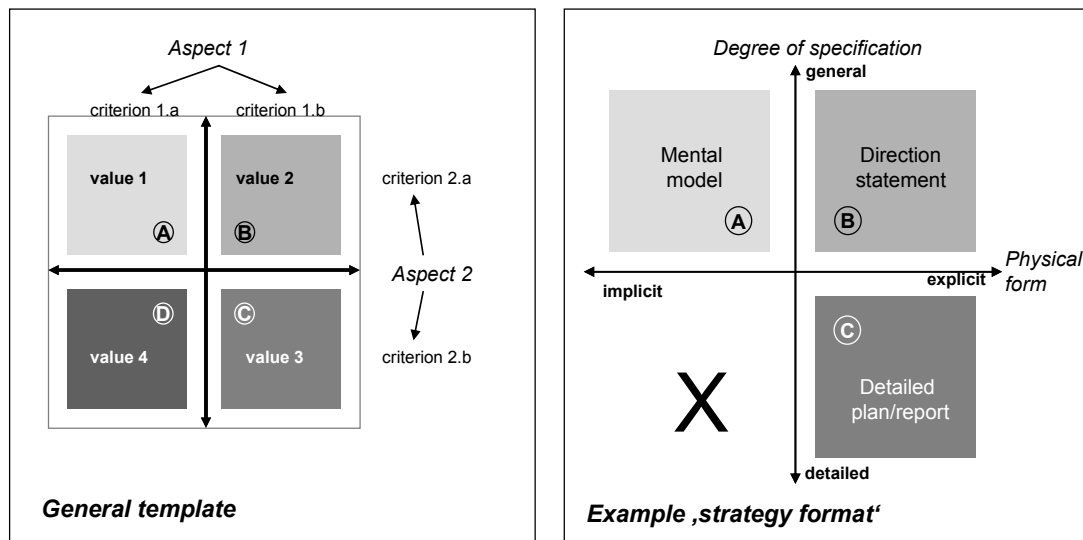
Figure 6-2: Exemplary template property matrix

These property matrices are actually 'mini typologies' as they are conceptualised as classification schemes. This format is preferred as it allows (conceptually) classifying cases according to a generic and basic model. It creates only a small number of options, but still stays close to the empirical evidence. We have observed in the case studies that the clusters of characteristics, i.e. properties, in most situations are not one dimensional, but posses at least two determining aspects. For example, for the exemplary property 'strategy format', the two underlying aspects are the 'physical form' and the 'degree of specification'. The physical form can be either 'explicit' (e.g. InnoMobile case) or 'implicit' (e.g. CreaStudio case). The degree of specification can be either 'general' (e.g. InnoMobile case) or 'detailed' (e.g. AdaptIT.com case). By putting these aspects on the two axes of the matrix four fields are constructed. Three of these four fields can be observed in the empirical data:

- Property value A: Mental model - general level of specification; implicit physical form;
- Property value B: Direction statement - general level of specification; explicit physical form;
- Property value C: Detailed plan/report - detailed level of specification; explicit physical form.

In this way, a classicification scheme is created for each property. Related to the requirement that each property needs to be a 'relevant classification criterion', all relevant properties are firstly collected directly from the empirical evidence and, secondly, they are broken down into a clear classification format. Although the format of this matrix is the preferred model to conceptualise a property, it can not always be used. The choice for a conceptual model of the property is therefore made on a case by case basis for each property depending on the nature of the related empirical evidence. For example, the context property of 'corporate

maturity' is better represented by a lifecycle model of the KIE. By doing so, it is possible to create a set of properties for corporate strategy systems and their contexts. The set of properties are derived directly from the empirical evidence, but they are conceptualised into a distinctive format in order to provide a transparent classification scheme.

The exploration of CSS functions and processes follows the same procedure with the only difference that no distinction in various values is made. This is because functions and processes are not properties of a system, but should be considered as basic elements (see definitions in table 1) of the corporate strategy system.

In a fourth and final step, the constructed mini models (e.g. in matrix format) are compared with the literature and are validated by the case study participants, as well as with other researchers, through comparing the case studies with the conceptual representative models. Also, all cases are mapped within the scheme of classification criteria. Especially for the last two steps of this sequence it is necessary to continuously iterate with the empirical evidence from the cases (in particular with the collected observations from step one and two) until a model is created that is robust and internally logical, i.e. this sequence is iterated until 'theoretical saturation' is achieved. The intermediate results of this explorative process will not be displayed in this chapter.

The following paragraphs will display the resulting functions, processes and properties. We will not repeat the detailed case description (see chapter 5) or the literature studies (see chapter 2 and appendices E & F). The functions, processes and proerties will be displayed together with the main pieces of analysis of the empirical evidence and literature. After this introduction on the procedure we can proceed with the exploration of properties for the context of the corporate strategy system, i.e. external and internal environment of the knowledge-intensive enterprise.

6.2   External environment properties

This paragraph presents the resulting properties of the external environment of knowledge-intensive enterprises. By following the procedure as described above, we have been able to determine a number of external environment properties. The details of the procedure will not be repeated for every property. The properties will be determined one after another and will be presented together with the main evidence from the cases and (where relevant) references to core literature.

6.2.1   Environmental change pattern

The case study enterprises, like other enterprises, do not operate in vacuum but have to cope with a number external environment factors, such as markets, customers, technology, suppliers, competitors, partners, as well as broader environmental forces (e.g. economy, science, society, ecology, politics and culture). These factors are changing throughout time and it is especially these changes that are hard to predict and have an impact on the knowledge-intensive enterprise and its corporate strategy system. Changes can be caused by for example changing market conditions, deregulation of markets, disruptive technological introductions, new market entrants, changing customer demand, new tax laws, etc. etc. For example, the TelEquip and AdaptIT.com context are impacted by the burst of the dot.com bubble and the automotive companies are affected by the maturity and intense competition of their industry.

The first external environment property related to the external forces of change is named 'environmental change pattern' and is described as: *the pattern of frequency and amplitude of external environmental changes.* The analysis of the environmental change pattern for the various case study enterprises is presented briefly below.

Analysis of cases: environmental change pattern	
CreaStudio	Market and customer forces are changing rapidly.
InnoService	External forces are causing change rapidly. However, these forces seem to be 'steady change', in a sense that the general direction of these changes can be foreseen.
AdaptIT.com	As the whole ICT industry, the external environment is extremely dynamic and volatile – the period of case investigation is the middle of the burst of the 'dot-com bubble'. Especially markets, customers and partners contribute to dynamics and volatility.
VERYSoft	The environment of a young and fast growing market segment – of human capital software - within the overall software sector is dynamic and changing rapidly.
SolveTix	SolveTix is surrounded by fast changing technology and market forces.
Linux	There is high amplitude of change, especially related to technologies, markets, partnerships and politics. With a rather moderate frequency of change, this leads to a volatile environment.
TelEquip	The overall ICT industry is in a slump, mainly because of structural economic cycles and the dot.com bubble burst. This leads to high frequency and high impact change levels, especially for markets and technology.
MachOne	Market and technology forces are changing fast.
CoolSystem	Events in the global automotive supply chains have direct impacts on CoolSystem, leading to a volatile pattern of change.
InnoMobile	There are various external environment forces that are changing rapidly. However, the pattern of change is evolutionary.
DriveSupply	The global economy and developments in the automotive and other supply chains present a volatile pattern of external changes for the DriveSupply.
GlobalCar	The company is faced with volatile environmental forces such as saturated markets, global competition, fluctuating economic influences and rising technological standards.

Table 6-1: Cross-case analysis – environmental change pattern

These pieces of analysis show that it is not only the pace or frequency of change that has an impact on the enterprise, but also the impact of that particular change on the enterprise's activities matters. In other words, an external factor might be changing very fast, but does not necessarily have a big impact on the KIE. This is because some of the external changes are more relevant and more important than others for the conduction of economic activities. Accordingly, the property is conceptualised through two determining aspects, i.e. the frequency of change and the amplitude of change. Whereas, the frequency of change relates to the pace of change, the amplitude of change is a representation of the size of the 'shock' that each change initiates. It can be considered a measure of volatility or impact of change.

As shown schematically in the following figure, four property values are thus constructed:

- *Stable*: changes caused by external forces are occurring not so frequently and are only moderate in their impact (amplitude of change) on the enterprise;
- *Dynamic*: changes caused by external environment forces occur very frequently, however their impact is only moderate;
- *Volatile*: external forces for change are occurring rather occasional, however when they do there is a big impact on the enterprise;
- *Turbulent*: the environment is characterised by frequently occurring, high impact change forces.
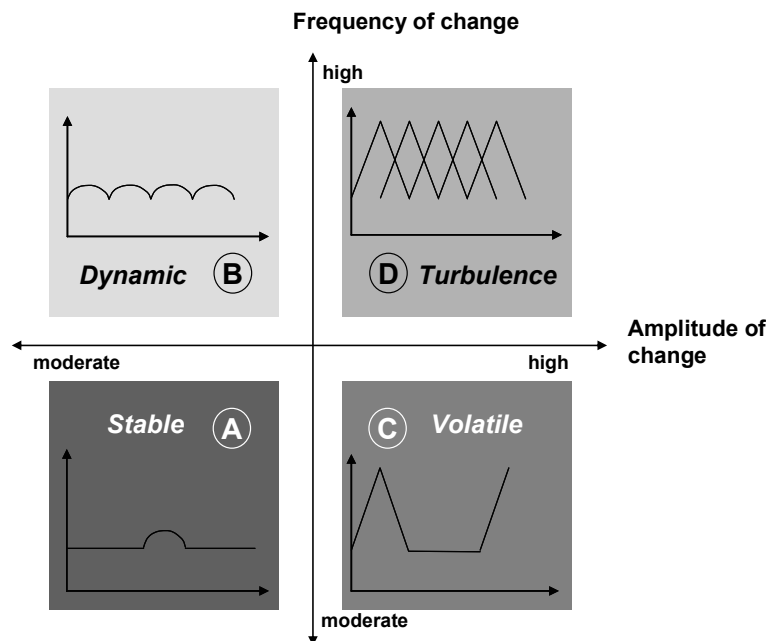
Figure 6-3: Context Property #01 'Environmental change pattern'

The 'stable' pattern of environmental change has not been directly observed in the case studies. This could imply that it is not a likely characteristic of a KIE. However, there is theoretically no reason to assume that it can not occur in KIE environments.

The environmental change pattern property and its implications on corporate strategy systems are well known and often explored in the academic domain. Especially in corporate strategy literature the role of changes in the external environment are often described as important variables of context, e.g. *"Strategic evolution of an organisation is determined by a three-way feedback interaction between forces of the environment, the internal configuration and dynamics of the organisation, and its strategy."* [Ansoff, 1987] Environmental patterns of change are also modelled and explained in different theories related to e.g. lifecycles [e.g. Tushmann & O'Reilly, 1998; Porter, 1996; Schendel, 1996a; etc.], evolution theories [e.g. Nelson & Winter, 1982; Lewin & Volberda, 1999] and studies on complex, emergent systems [e.g. Kaufmann, 1993; Wiekhart, 1997; Mittleton-Kelly, 2001]. The concept of environmental turbulence has received considerable attention [e.g. Volberda, 1998; D'Aveni, 1999; and Buchner, 2001].

Thus the environmental change pattern property is a known property in literature and, as observed in the case studies, is important for knowledge-intensive enterprises. The property in KIE contexts can be stable, dynamic, volatile and turbulent. Most of the case studies are characterised either by the dynamic or by the volatile environmental change pattern. Some exhibit a turbulent change pattern, but none a stable pattern.

6.2.2   Competitive complexity

Knowledge-intensive enterprises face competitors in their external environments. In the more mature industries there typically are fewer competitors, but they are more forcefull. Young and fast developing markets or segments, such as e.g. the software market segment of VERYSoft, contains mainly smaller and non-dominating competitors. The property that relates to competitive forces of the knowledge-intensive enterprise is named 'competitive complexity' and is defined as: *the level of competitive complexity, as determined by the heterogeneity of competitive forces and their intensity.*

Analysis of cases: competitive complexity	
CreaStudio	There is a variety of competitors, many new ones also coming onto the stage. As the market is growing also rapidly, the impact on a small enterprise like CreaStudio is moderate.
InnoService	Also due to the transformatory character bridging different competitive arenas, there are different types of competitors (see picture earlier). Although the competitive intensity in the design studio arena is quite high, the overall competitive intensity is rather modest; it is not a cut-throat arena for InnoService.
AdaptIT.com	In the strongly downward markets, existing players are fighting for a much smaller cake in total. Forces for change are the same for all players, namely a general (temporal?) decline of the industry.
VERYSoft	The level of competition in this growing segment is, e.g. compared with the overall software industry, modest.
SolveTix	The enterprise is facing various groups of competitors.
Linux	There are few but homogenous competitive forces (e.g. Microsoft). These forces are very strong and due to interconnectivity increase unpredictability of the environment.
TelEquip	There is a variety of competitors and high competitive intensity. However, these forces are expected to be temporal (for the time of the markets consolidating).
MachOne	MachOne is facing a small number of competitive forces.
CoolSystem	There is a limited number of highly competitive first tier suppliers in the automotive industry.
InnoMobile	The consolidated and mature automotive industry is highly competitive, with a small number of big players fighting for turf.
DriveSupply	The enterprise is confronted with intense competitive forces.
GlobalCar	There is intensive competition in the automotive industry, by a few remaining OEM's.

Table 6-2: Cross-case analysis – competitive complexity

The competitive forces that confront the case study enterprises seem to differ on two main aspects. The first is the heterogeneity of competitive forces. The second aspect is the intensity of the competitive forces. Heterogeneity relates not only to the number of competitors, but more to the differences between them. For example, a diversified enterprise will typically have to deal with different types of competitors in the various businesses it is active in. The intensity of competition is also determined not only by the number of competitors, but more by the strength of these competitors. For example Linux is mainly up against one big competitor (Microsoft), but this happens to be an extremely resourceful and tough competitor. By combining these two aspects, as shown schematically in the following figure, competitive complexity can take the following forms:

- *Moderate competition*: there is a low level of diverse competitive forces that confronts the enterprise (in all its businesses) and the intensity of these forces is moderate as well.
- *Competitive pressure*: the enterprise is confronted with homogeneous but highly competitive forces.
- *Heterogeneous competitive forces*: there is a heterogeneous group of different competitive forces confronting the enterprise (in all its business endeavours), however they are of moderate intensity.
- *Hyper competition*: the enterprise is confronted with heterogeneous and highly competitive forces.
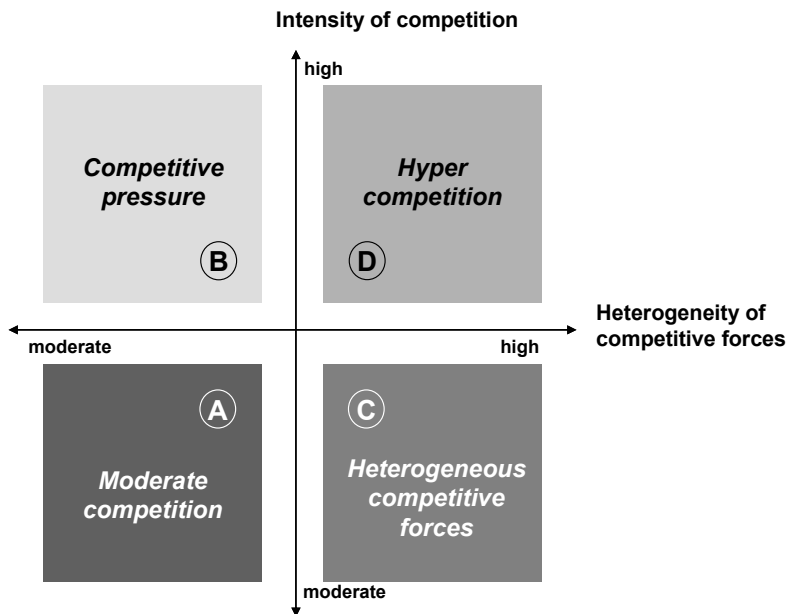
Figure 6-4: Context Property #02 'Competitive complexity'

Especially mature enterprises acting in mature markets, such as e.g. GlobalCar and InnoMobile, are left with a small number of competitors but with high competitive intensity. The younger enterprises acting in an expanding marketplace, such as VERYSoft and InnoService, seem to have more room for competitive manoeuvring. All forms of competitive complexity have been observed in the various cases.

The issues of competition and the corresponding need for defining competitive strategies are often considered as one of the core disciplines of strategy literature. The notion of strategy as the art of warfare is the oldest discipline of strategy theory and the origin of modern (competitive) strategic thinking. One of the strategy schools, as described in the state of the art chapter, is dedicated to positioning (against competitors). The concept of 'hypercompetition' has been studied most prominently by Richard D'Aveni [1995].

Thus the competitive complexity property is not only a known property in literature, but as observed in the case studies, is relevant for knowledge-intensive enterprises. The competitive complexity property in KIE contexts can be moderate competition, competitive pressure, heterogeneous competitive forces and hyper competition. All of these values have been observed in the case studies.

6.2.3   Stakeholder integration

A knowledge-intensive enterprise has to deal with a number of stakeholders in their external environment, such as customers, suppliers, shareholders, owners, capital providers and strategic partners. The context property that is related to the stakeholders is named 'stakeholder integration' and is defined as: *the degree of stakeholder integration as determined by the variety of stakeholder forces and level of connectivity (e.g. influence, importance) of these stakeholders with the enterprise.*

As we can see from the analysis of the case studies in the following table, some of the stakeholders are more relevant and more important than others for the KIE. The KIE is (deliberately or less deliberately) engaged in a number of business relationships with stakeholders.

Analysis of cases: stakeholder integration	
CreaStudio	CreaStudio has intensive relationships with its customers and is looking for increasing the regional and international collaboration with partners in development.
InnoService	There are two / three clearly dominant stakeholders – customers and employees. There influence on the business is high. Also the investment group has influence on the business activities.
AdaptIT.com	The enterprise has very strong ties with its (technology) suppliers and its customers.
VERYSoft	The enterprise has longer term strategic alliances with a network of distributors and service partners. Moreover, collaboration in R&D is increasingly important.
SolveTix	There is a complicated and wide network of relationships surrounding SolveTix.
Linux	There is a wide variety of stakeholder groups, such as e.g. enterprises, users and individual developers. Linux is a loose, collaborative effort with no clear, formal strong ties.
TelEquip	There are different groups of relevant stakeholders. But their connectivity levels range from low (partners) to moderate (suppliers) to high (customers).
MachOne	MachOne has a number of stakeholder relationships, especially with strategic partners in R&D.
CoolSystem	CoolSystem is part of a heavily integrated supply chain, where it is continuously increasing its coordinative capacities.
InnoMobile	There is a strongly connected network of partnerships and suppliers in the direct environment of InnoMobile. There is an intense chain of suppliers coordinated by InnoMobile.
DriveSupply	As a global technology-oriented supplier to various manufacturers, it is deeply integrated in a web of stakeholders (e.g. customers, partners, suppliers, etc.).
GlobalCar	The supply chain with a number of tiers is broad and deeply integrated.

Table 6-3: Cross-case analysis – stakeholder integration

The relationships with stakeholders are bi-directional and there can be all sorts of exchange processes between them, such as for example an exchange of knowledge in a R&D partnership. From this 'structure' (in systems thinking viewpoint) surrounding the enterprise at any point in time a snapshot can be made and this snapshot can be characterised. This web of relationships is however considered to be mainly determined by the variety of stakeholders and the level of connectivity.
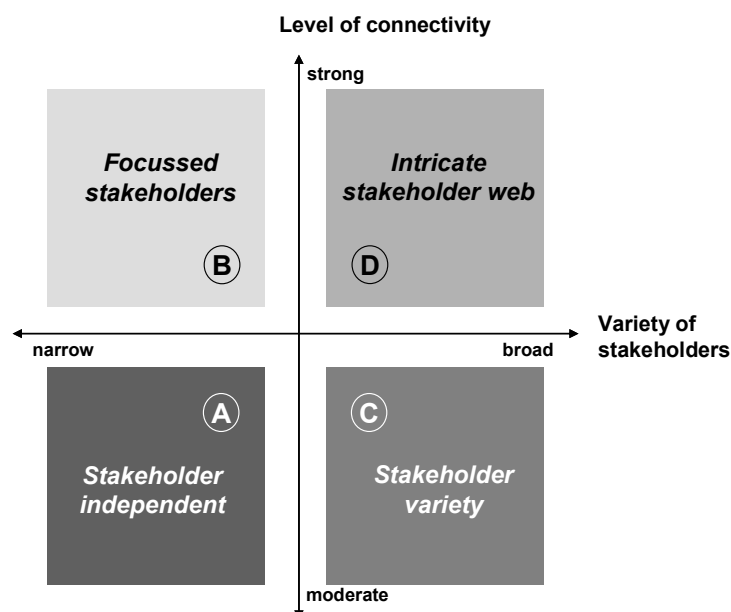
Figure 6-5: Context Property #03 'Stakeholder integration'

As depicted in the figure above following forms of stakeholder integration are constructed:

- *Stakeholder independent*: there is a small variety of relevant stakeholders, and there is not a strong connection with the enterprise.
- *Focussed stakeholders*: there is a small variety of strongly connected stakeholders.
- *Stakeholder variety*: there is a wide variety of stakeholders, however they are not important or without much influence on the enterprise.
- *Intricate stakeholder web*: there is a variety of strongly connected stakeholders, which the enterprise has to deal with.

The stakeholder independent value is not a very likely one and is accordingly not observed in the case studies. However, there are no good reasons why it could not occur in practice. It could be imagined for a (very) small enterprise that is producing in larger batches and has no strong ties with its customers, as well as having no owners with control over business activities. Focussed stakeholders are especially observed in the smaller enterprises, such as e.g. CreaStudio, VERYSoft, InnoService and MachOne. Stakeholder variety is observed in two quite different cases, namely Linux and TelEquip. The intricate stakeholder web is observed in the intense supply chains of the automotive case companies as well as in the SolveTix case.

The relationship with stakeholders has been especially studied by scholars in relation to the intent of stakeholder value and the according debates of corporate social responsibility and sustainability of the enterprise. Also the embedded organisation perspective in the network debate (see paragraph 2.3) makes a point for stakeholder connectivity. The relation with customers and suppliers has been extensively studied for example in the discipline of supply chain management and customer relationship management, among many other disciplines. Literature [e.g. Skyrme, 1999; Allee, 2002] makes a point that joint ventures, R&D alliances and other types of strategic networks are especially important for knowledge-intensive enterprises, because of their need to specialise on their core competencies and collaborate in other related areas of expertise.

Thus the stakeholder integration property is a relevant property for knowledge-intensive enterprises, not only in execution of value adding activities (e.g. customers and suppliers), but also in regard to strategic development efforts (e.g. with R&D partnerships). The observed values of this property in KIE contexts are focussed stakeholders, stakeholder variety and intricate stakeholder web.

6.2.4   Value web position

A knowledge-intensive enterprise is integrated in a larger value web. The value web is a more encompassing term [see e.g. Normann & Ramirez, 1993] than value chain, as it represents a more dynamic, interactive concept. The KIE is not only strategising in order to achieve a distinctive position in relation to its customers and competitors, but also with other stakeholders such as suppliers and strategic partners. The external environment property related to the distinctiveness of position of the knowledge-intensive enterprise in its value web is named 'value web position' and is defined as: *the distinctive position of the enterprise within the entire web of value relationships, as determined by the degree of power the enterprise holds over the value chain and the perception of distinctiveness by customers.*

Analysis of cases: value web position	
CreaStudio	The company is a small and regional acting consultancy with not much visibility or reach in the broader consulting industry.
InnoService	The enterprise is in a process of positioning itself in a young and new market. There is not a clearly distinguished position there, yet.
AdaptIT.com	Small company with no real chain power. Close ties with its customers and its regional recognition makes the enterprise distinguished locally.
VERYSoft	As it is acting in a new market segment, VERYSoft is one of the first and visible players. In the broader software industry, the position is modest and not dominant.
SolveTix	As a start up the enterprise does not have a dominant position in the value chain.
Linux	Linux and its products are well known (marketability), with clear advantages for its users. However, the organisation does not have a dominant position in the industry (by the way, this was never the aim).
TelEquip	This needs to be considered relatively. Compared to the overall industry and smaller new entrants, the enterprise clearly has a high profile. However, the enterprise is not the absolute number one. With some key customers there is high influence and high levels of distinctiveness.
MachOne	MachOne as a systems integrator has strong relations with its customers, but is dependent on the rest of the supply chain.
CoolSystem	CoolSystem is a first tier supplier delivering value adding modules to automotive OEMs and thus is clearly distinguished towards its customers. These OEMs however are generally considered to dominate the overall value chain.
InnoMobile	The brands of InnoMobile are clearly positioned and distinguishable in the various market segments. As an OEM, InnoMobile is the driving force in its value chain.
DriveSupply	The enterprise is not the dominant player in the value chain, but has a clear global position and image.
GlobalCar	GlobalCar has a dominant position in the supply chain and has clearly distinguished, worldwide leading brands.

Table 6-4: Cross-case analysis – value web position

The case studies differ on two main aspects, namely the distinctiveness of position and the degree of power. The degree of power mainly relates to the influence the enterprise has over its partners in the value web, e.g. negotiating power towards suppliers. The distinctiveness of the position is mainly related to the perception of the KIE customers.
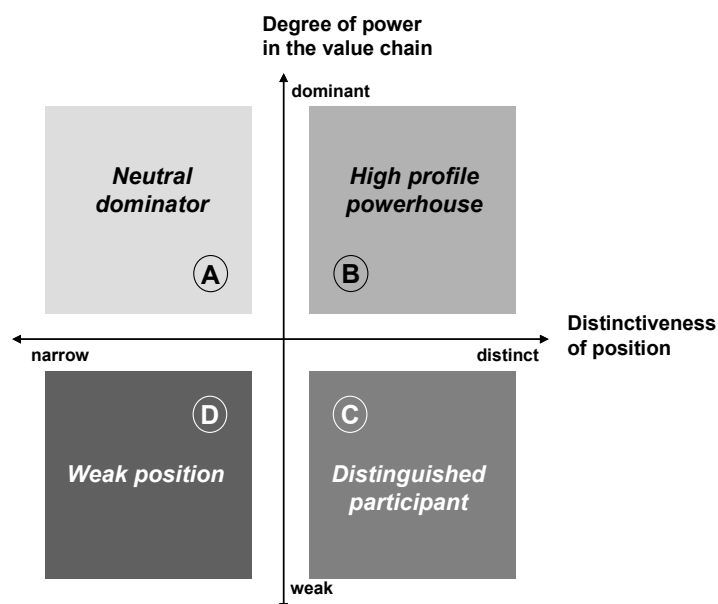
Figure 6-6: Context Property #04 'Value web position'

By combining these two aspects, following types of value web position are constructed:

- *Neutral dominator*: the enterprise has a dominant position in the value position, however the customers do not recognise the distinctiveness.
- *High profile powerhouse*: the enterprise holds a dominant position in the value chain and is clearly recognised by customers.
- *Distinguished participant*: customers recognise the distinctive traits of the enterprise, but the enterprise has a weak position in the value chain.
- *Weak position*: not clearly distinguished and no power position in the value web.

The automotive manufacturers (InnoMobile and GlobalCar) have global well known brands and exercise a high degree of power in the value chain. Companies like DriveSupply, CoolSystem and TelEquip are distinguished participants. A neutral dominator was not observed in the case studies. A weak position characterises InnoService and VERYSoft, among others.

This property can also be related to the positioning school of strategy research. However, this school is traditionally more focussed on competitive positioning. The property of value web position is a more holistic concept as it encompasses also the position of the KIE with other parties in the value web, e.g. suppliers and partners. This concept has been studied for example by authors in the embedded perspective of the network debate, as well as by authors belonging to the boundaries school (see chapter 2).

Thus the property value web position is known in literature and the challenge of achieving a distinctive and favourable position within the value web has a direct impact on the development of the KIE. The value web position property can be that of a weak position, a distinguished participant, a neutral domaintor and a high profile powerhouse. Apart from the neutral dominator, these properties have been observed in the case studies.

6.2.5   Summary: reflection on external environment properties

The external environment is the ecosystem surrounding the living KIE system. As a result of the cross case analysis, we have identified four properties that are determining the form and shape of this ecosystem, i.e. environmental change pattern, competitive complexity, stakeholder integration and value web position. In this way, both static and dynamic aspects of the environment are taken into account. The KIE is affected by the global context of the knowledge economy, but more so by the levels of volatility and dynamics of the specific industry and markets where the KIE is active. The pattern of change is reflected in the property of environmental change pattern. The KIE can be considered in a coevolutionary process with its competitors to compete for turf. The markets of the case study companies display various levels of competitive intensity and also the heterogeneity of competitive forces distinguishes between various KIE contexts. These aspects are captured in the competitive complexity property. The main elements that the KIE deals with in its external environment are its stakeholders and the value exchange processes the living system pursues with them. There can be various degree of connectivity within stakeholder systems. This follows the stakeholder view and stakeholder value creation concepts, i.e. there are interactive and dynamic processes of value exchange and co-evolution. The KIE is aiming for a favourable and distinctive position. These aspects are reflected in the property of stakeholder integration and value web position.

We can conclude that these properties provide a way to characterise the external environment of knowledge-intensive enterprises in a distinctive way. The properties and their definitions are summarised in a comprehensive form in the appendix B.

6.3   Internal environment properties

In this paragraph we will now shift our attention to the internal environment of the knowledge-intensive enterprise. The process that is followed is the same as for the external environment. The properties will be discussed one after another and will be presented together with the main evidence from the cases and (where relevant) references to core literature. Again the details of the case study (see chapter 5) description will not be repeated.

6.3.1   Corporate maturity

The youngest case study enterprise is VERYSoft and the oldest case study enterprise is GlobalCar. By just comparing these two enterprises, there are clear differences not only in terms of size or age, but more importantly for this research, in terms of corporate strategy system form and shape. The property that relates to the level of enterprise maturity of the KIE is called 'corporate maturity' and is defined as: *the level of maturity the enterprise exhibits, as determined by the phase in its lifecycle.* The following table highlights the cross case analysis of the corporate maturity of the case studies.

Analysis of cases: corporate maturity	
CreaStudio	CreaStudio is a young company that exihibits fast internal change processes and is in a process of defining the organisation more formally and professionally.
InnoService	The enterprise is in a transition period. Interestingly enough, after a period of formation and stable development (as a design & engineering supplier), a new period of 'formation' as a 'product strategist' has been passed. The enterprise is at the beginning of a growth phase, where it is looking for more growth.
AdaptIT.com	The enterprise is growing with an average of around 23% increase in employment. However, the last two years have seen a dramatic decrease in employment, turnover and profitability.
VERYSoft	The enterprise is young and growing.
SolveTix	SolveTix is a young, dynamic and fast growing enterprise.
Linux	The organisation is still advancing progressively, in terms of e.g. number of users and volume, but there are also signs of maturity setting in.
TelEquip	This should be taken with some precaution. The enterprise is not in its birth or really maturity stage. Even though, currently there is negative growth, the dynamics are comparable to a growth phase. In more detail, some units of activity are in decline, some are mature, some are being formed.
MachOne	The enterprise is growing.
CoolSystem	CoolSystem is a mature, traditional enterprise.
InnoMobile	The enterprise is a mature enterprise, one of the few remaining players in the industry. Still, it has a strong proven track record in innovation.
DriveSupply	The enterprise has a long heritage and its core business is a mature business.
GlobalCar	The company has a long heritage and is active in mainly mature businesses.

Table 6-5: Cross-case analysis – corporate maturity

The property of corporate maturity is much discussed in literature [e.g. Greiner, 1972; Adizes, 1999; Pümpin and Prange, 1991; Warnecke, 1993]. The concept to model this property is based directly on these and other conceptualisations of the corporate lifecycle and is depicted in the figure below. Any KIE can be clearly distinguished by the lifecycle phase it is in, for example a KIE can be in its infancy as a start up or might be matured through different periods of crisis, and so on.
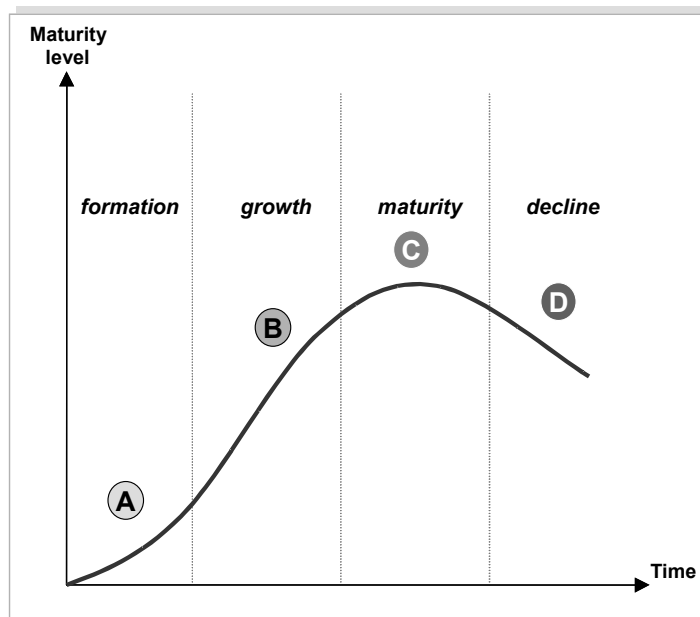
Figure 6-7: Context Property #05 'Corporate maturity'

By using the concept of the corporate lifecycle, following stages of corporate maturity are determined:

- *Formation*: the enterprise is in its infancy, being formed and shaped.
- *Advancement*: the enterprise is advancing its resources and activity system.
- *Maturity*: the enterprise is reaching a level of saturation and age.
- *Decline/Renewal*: the enterprise is declining or renewing itself.

Although the decline phase has not been observed directly in one of the case study companies on the corporate level, there is enough literature (e.g. from other industries) to support the view that this phase exists [e.g. Greiner, 1972; 1998]. Also, it has been observed for parts of the enterprise, e.g. declining business units inside TelEquip. The concept can therefore be extended to apply not only on the corporate level, but also on the level of the business unit or other unit of activity. Thus this property is much studied in literature and provides a clear scheme to distinguish between the various KIE.

6.3.2   Value proposition

The next property relates to the outcome of the activities of the KIE and the value this adds to its stakeholders. The most tangible outcome of any enterprise is embodied in the products and/or services it produces. A KIE can be distinguished by the type of value proposition it offers (to its customers). Products can for example be produced in mass, in series or as stand-alones. Furthermore, KIEs can be delivering its value proposition to different customers, distinguished by the position it takes in the industry value chain. But most importantly, the KIE can be distinguished by the key type of value it intends to add. The context property that relates to the main value the knowledge-intensive enterprise intends to add is named 'value proposition' and is defined as: *the main type of value proposition the enterprise is offering its customers, as determined by orientation of value offering.*

Analysis of cases: value proposition	
CreaStudio	The enterprise offers unique services and is focussed on providing a value add to its customers.
InnoService	The value proposition is build around individualised problem solving for customers. Intangible aspects such as brand, image, human capital are critical building blocks for the value proposition. All focussed on delivering 'superior' customer value.
AdaptIT.com	The enterprise delivers completely customised professional solutions to individual customers (through collaborative projects). Customer value (e.g. through quality of services and flexibility) is the key focus of the enterprise's value add. However, price and brand are becoming more important (indicators for a maturing market).
VERYSoft	VERYSoft focuses on delivering a high value adding, customisable software package with various modules.
SolveTix	SolveTix offers solutions (combined products and services) focussed on specific customer needs.
Linux	There is (and has been from the start) a strong focus on the product, i.e. its quality, performance, the source code, elegance, etc. (comparable to 'scientific method'). More awareness of customer value is being introduced in the organisational system.
TelEquip	The traditional and currently dominant focus is on product value. Currently, and more so in future, there are strong forces towards more customer value.
MachOne	MachOne is focussed on delivering customer value through unique, one of a kind, customer solutions (machines).
CoolSystem	As a first tier supplier and systems integrator, the strategy and structure of CoolSystem is oriented on delivering customer value.
InnoMobile	The enterprise is strongly focussed on delivering top end products to the various segments in which it is active.
DriveSupply	The enterprise is completely oriented and structured to deliver customer value.
GlobalCar	The enterprise is aiming to achieve synergy between its various divisions and units. An overarching aim is to optimise the whole system for shareholder value.

Table 6-6: Cross-case analysis – value proposition

This property is modelled along three dimensions as shown in the figure below. In this way, it becomes clear that a KIE will predominantly orient all its activity system on providing one of these types of value propositions.
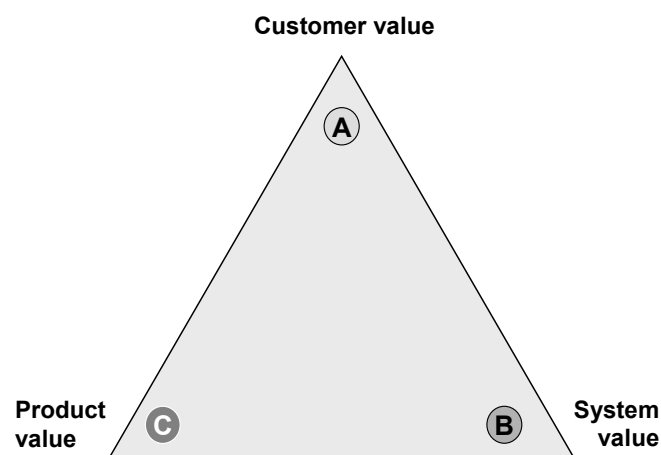
Figure 6-8: Context Property #06 'Value proposition

Thus following three possible value propositions are constructed:

- *Customer value*: the enterprise is providing products or services aimed at offering highest possible value to customers. Logic of customer economics; customer intimacy.

- *System value*: the enterprise is aimed at providing highest possible value in terms of excellence of the entire enterprise system. Based on system economics; operational excellence.
- *Product value*: the enterprise is aimed at providing highest possible value through technological and product leadership. Based on best product; product leadership.

This conceptual model relates to the theory of Treacy & Wiersema [1993] on value adding disciplines (e.g. customer intimacy and operational excellence) and of Hax & Wilde [1999] (e.g. system lock in). As described in these studies, as well as by Porter [1996], the enterprise is wise to focus on one of these value propositions as tremendous efforts are required of the whole activity system in order to deliver a distinctive and sustainable proposition to customers. This is also reflected in the cases, where one of the three types of value proposition is clearly dominating the strategic orientation of the KIE. All three types of value proposition have been observed in the cases. The customer value proposition is observed among others in the professional services companies and systems suppliers in the automotive sector. The system value can be observed in the GlobalCar case. The product value is the key orientation for InnoMobile and Linux.

Thus the value proposition property can be found in similar form in literature and the types, i.e. system, customers and product value, are all observed in the knowledge-intensive enterprises of the case studies.

6.3.3   Resources advancement

The property related to resources of the KIE and the way they are developed is named 'resources advancement' and is defined as: *the dominant manner for advancing corporate resources, as determined by the key type of resources (knowledge vs. technology) and the innovative capacity of the enterprise (radical vs. incremental innovation).*

Analysis of cases: resources advancement	
CreaStudio	The main resources are the knowledge and experience of the designers, consultants and project managers. These human resources advance by every project and through external collaboration dedicated to knowledge development.
InnoService	The enterprise is highly knowledge-intensive. The innovative capacity is one of continuous development.
AdaptIT.com	The enterprise is putting much effort in updating both its technological competencies as well as its knowledge base. However, it is mainly focussing on picking up developments after they have passed first stages, in order to incrementally offer new products. Fast, but incremental.
VERYSoft	Core competencies relate to development and delivery of commercial software. It is aimed at developing, especially technical, competencies quickly.
SolveTix	SolveTix is a technology company that develops both products and services based on developing (itself) or exploiting (from suppliers) technology fast and incrementally.
Linux	The organisation is developing technology very quickly, but incrementally. New areas of application are mainly opportunity-driven and not created proactively. The resource advancement is based on very fast community based knowledge creation.
TelEquip	The enterprise is technology-intensive, a *"house of professional inventors"*, which is mainly innovating in incremental steps.
MachOne	MachOne is a technology-intensive enterprise with a strong emphasis on R&D and incremental technical innovation.

CoolSystem	The core competencies of CoolSystem relate to the automobile subsystems. The company is investing significantly in developing new technologies and products and aims for technology leadership.
InnoMobile	The enterprise has a broad basis of technical competencies and partnerships. It is investing strongly in innovation and aims to be the most innovative brand in the industry.
DriveSupply	DriveSupply is a technology-intensive enterprise aiming for technology leadership that spends significantly on technology development and innovation.
GlobalCar	One of the four strategy pillars relates to technology and innovation leadership. The company is aiming to develop technologies and innovate in its core areas.

Table 6-7: Cross-case analysis – resources advancement

Different streams of research within and building on the resource-based view of the firm - such as the knowledge-intensive view of the firm, the core competencies model and dynamic capabilities school [Grant, 1997; Itami, 1987; Leonard-Barton, 1995; Barney, 1991; Hamel & Prahalad, 1990; among others] – all underline the crucial importance of resources for the performance of enterprises. Resources are sometimes also referred to as the roots of competitiveness.

A knowledge-intensive enterprise has been defined as an enterprise with mainly knowledge workers in the primary process or at least in the technical staff when this has a dominant influence on the functioning of the primary process [Weggeman, 1999]. This definition makes a direct link to the importance of human and other intangible resources for any KIE. However, not all KIE are grounded in the same roots. Most basically, some KIE rely heavily on technology and its application in products, others rely more strongly on human talent and knowledge, others rely more on information or the participation in the right networks (relational resources), and so on. Accordingly, a KIE can be distinguished according to the resources that are most dominant for the primary economic activities of the enterprise. Also, not all resources are as durable as others. Some resources might be easily copied by competitors, others less so. Some provide the KIE with a differentiation, others less so. Some provide access to a wide variety of markets, others not. Therefore KIE can be distinguished by the distinctiveness of the roots they are built on (resources).
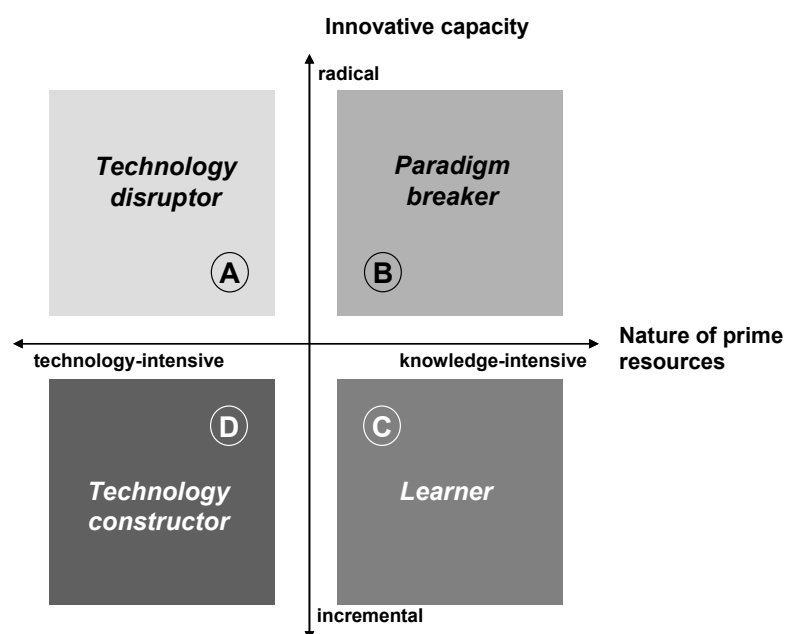
Figure 6-9: Context Property #07 'Resources advancement'

When adding the factor time, resources change. For example technologies are further researched or improved through application, new knowledge can be gained and more network capital can be obtained. In other words, resources are dynamic, learning and innovation take place. Some [e.g. Barney, 1991; Katzy, 2003; D'Aveni, 1995; Haeckel, 1999; Davis & Meyer, 2003] state that for KIE, the speed of advancement and the ability to adapt them is even more important than the resources per se (see e.g. dynamic capabilities school). This can be captured with the two aspects of the nature of prime resources and the innovative capacity of the KIE.

When combined the following types of resources advancement are constructed:

- *Technology disruptor*: the enterprise is radically changing its technological resources base.
- *Paradigm breaker*: the KIE is radically innovating its knowledge base.
- *Learner*: the enterprise is knowledge-intensive and is advancing its resources base through incremental innovation.
- *Technology constructor*: the enterprise is mainly incrementally developing new technology.

All these types have been observed in the cases. The distinction between knowledge- and technology-intensive relates to what some refer to as implicit and explicit knowledge [Warschat et al., 2002]. The incremental versus radical innovation relates to the strategic posture of the enterprise, i.e. is the enterprise willing (and capable) to take more risks and invests more time and effort in innovation.

The resources advancement property thus directly links to schools of thought in strategy research and is relevant for knowledge-intensive enterprises. The technology disruptor, paradigm breaker, learner and technology constructor types provide a clear conceptual model for classifying various KIE.

6.3.4   Units of activity (UOA) diversity

With their resources KIE are able to perform activities that are adding value to their stakeholders. As observed in the case studies, the KIE can divide the activities it is conducting in various primary units of activity, such as for example: Projects; Business units; Business processes; Divisions; Subsidiaries; Regional companies; Functional departments; among others. The property that relates to the units of activity of the knowledge-intensive enterprise is named 'units of activity (UOA) diversity' and is defined as: *the number of units of activity and the amount of difference (in terms of businesses) between them.*

Analysis of cases: Units of activity diversity	
CreaStudio	The main units of activity are the client projects in the fields of product design, communication and product development.
InnoService	The enterprise is active in one business. Main units of activity are projects and the five knowledge areas (see figure in case study description).
AdaptIT.com	The enterprise is in the business of offering customised e-business solutions.
VERYSoft	VERYSoft is active in one field of business, i.e. human capital software production.
SolveTix	SolveTix is in the business of applied telematics solutions for automobile and people location services.
Linux	The Linux organisation is active in the business of operating systems. There are many closely related communities in the open source domain, e.g. for applications running on Linux OS. There are numerous related companies, services and distributors.

TelEquip	The enterprise has four business units, but they are in related businesses.
MachOne	MachOne is active in one main business.
CoolSystem	The CoolSystem units of activities consist of product divisions, customer centres and regional companies. They are all active in a related field of business.
InnoMobile	The enterprise is globally active with R&D and production in various places in the world. The core business is automobiles with some related businesses.
DriveSupply	The DriveSupply consists of a broad portfolio of business activities with global coverage.
GlobalCar	The enterprise covers a broad range of activities. All units of activity are related to the automotive industry, but covering its full diversity of segments.

Table 6-8: Cross-case analysis – UOA diversity

Classically, when describing the enterprise primary activities one thinks of Porter's value chain. However, other authors [e.g. Normann & Ramirez, 1993] have shown that the activities of a KIE can be better understood as a network or an interactive system of activities (see also Porter's more recent work on activity systems). The primary activities can in this view be seen as the core value adding activities the KIE is conducting. Clear distinctions between KIE can be identified here. For example professional service firms typically have projects as the primary units of activity (see CreaStudio and InnoService case), larger enterprises typically have divisions (see for example GlobalCar case). For others, the more traditional functional department (see MachOne case) or business unit (see for example TelEquip) are the units of activity that are being coordinated and aligned in the corporate strategy system. Others have a mixed model (see for example CoolSystem's matrix structure and DriveSupply's unit and divisional structure). Also for global enterprises, the regional subsidiaries are a typical unit of activity. When trying to conceptualise this diversity of organisational forms, a continuum along the diversity of the units of activity is chosen. It is not only the basic units of activity (that a corporate strategy e.g. 'needs' to align), but also the nature of the primary activities that distinguishes between KIE. Some KIE have mainly problem solving work as primary activities, others posses more routine tasks in their processes. Some are locally oriented, others global. And so on. The clearest distinction between the cases, and most relevant for corporate strategy, is related to the diversity of business interests that are pursued with the diverse basic units of activity.
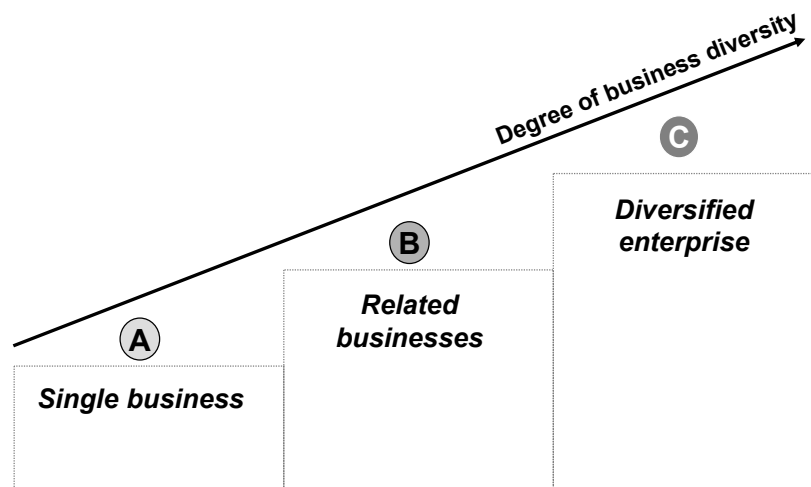
Figure 6-10: Context property #08 'Units of activity diversity'

As shown schematically in the figure, for the UOA diversity property three distinctive points on this continuum are determined:

- *Single business*: there is one main area of business the enterprise is involved in.
- *Related businesses*: the enterprise is active in a (small) number of related businesses.
- *Diversified enterprise*: the enterprise operates in different areas of business, some of them unrelated.

All three forms of UOA diversity have been observed in the case study enterprises. The smaller enterprises are typically active in one single field of business. Most of the larger enterprises have related businesses. DriveSupply and GlobalCar display the widest diversity in units of activity.

The UOA diversity property is often referred to in literature in relation with coporate strategy (corporate strategy is sometimes also referred to as strategy of the multibusiness company). As observed in the case studies, the single business, related businesses and diversified enterprise provide clear and relevant formats for classification of different KIE.

6.3.5   Collaborative structure

When comparing the cases, a clear distinction can be made between KIE regarding the way they have structured their value adding activities. The property related to the organisational structure is named 'collaborative structure' and is defined as: *the basic collaborative form of the corporate system of activities, as determined by the level of connection between the units of activity and the dominance of the corporate centre.*

Analysis of cases: collaborative structure	
CreaStudio	The enterprise is small and located in one office and there are strong informal ties between projects and with the entrepreneur.
InnoService	The relationships among the units (both projects and areas) are strong, as are the relationships with the corporate centre.
AdaptIT.com	The enterprise is actually small and has a strong corporate centre (management team) and rather strong ties between the different projects & functions.
VERYSoft	The company is structured regionally and according to function. There is strong collaboration across units.
SolveTix	SolveTix has a number of functional departments (e.g. R&D, Operations, M&S, etc.) that are steered by an integrated management team.
Linux	The Linux community is a loosely connected, flat network of individuals mainly connected over the internet. There is no formal corporate centre.
TelEquip	The corporate centre is driving the development of units of activity. Collaboration among units of activity is rising and given increased attention.
MachOne	MachOne is structured in functional departments (see figure in case study, chapter 5), with challenges in collaboration and knowledge sharing between departments.
CoolSystem	All units of activity are intensively cooperating together (as well as with external parties) in order to deliver customer value. The company structure is a matrix with cooperating units of activity (see figure in case study, chapter 5).
InnoMobile	The units of activity in the automotive segment are collaborating strongly, for example in shared R&D and production.
DriveSupply	The organisation is decentralised, giving entrepreneurial responsibility to the various business units.
GlobalCar	The enterprise is large and has dispersed units of activity. The central decision making power is significant.

Table 6-9: Cross-case analysis – collaborative structure

The previous property determined the diversity of units of activity that the KIE has. The collaborative structure property relates to the units of activity and is about the collaborative

relationships between theses units of activity. The two aspects of this property are the collaboration between units and the dominance of the corporate centre. When combining these aspects four disctinctive structures are determined.
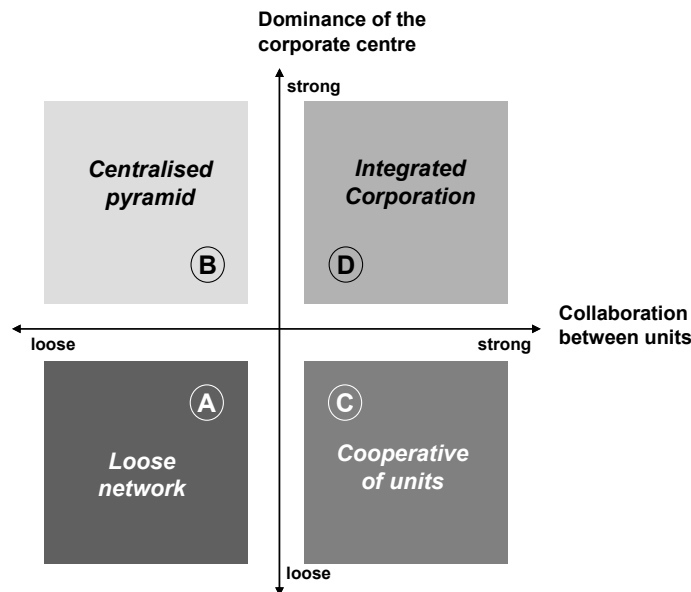
Figure 6-11: Context Property #09 'Collaborative structure'

As shown schematically in the figure, these collaborative structures are defined as:

- *Loose network*: there is a low level of collaboration between the different units of activity and a lack of corporate centre control.
- *Centralised pyramid*: there is not a lot of collaboration between the units of activity; units are mainly steered by a strong dominance from the corporate centre.
- *Cooperative units*: a dominant corporate centre is lacking, but the units of activity are strongly connected in guiding their activities.
- *Integrated corporation*: both the relationships among the units of activity and with the corporate centre are strong.

Linux is a good example of a loose network, where there is not much collaboration between the various units of activity, nor with the centre. The cooperative of units is a characteristic of the InnoMobile and CoolSystem cases. The centralised pyramid has been observed in GlobalCar, DriveSupply, TelEquip and MachOne. All the other cases are characterised as an integrated corporation. This seems typical for the small companies, where the relationships between all organisational elements might be informal, but (due to the size) strong.

The relation between corporate strategy and organisational structure has been extensively studied in literature. Even though there is considerable debate about the direction of the relationship, e.g. structure follows strategy debate, that there is a direct relationship between structure and strategy seems uncontested. More recently, the attention for collaboration and networked organisational forms has truly exploded and many authors have studied the broad palete of organisational collaborative forms [e.g. Mowschowitz, 1997; Camarinha-Matos, 2002; Moerman, 1994].

Therefore, collaborative structure is a relevant and important property. As observed in the case studies, the loose network, centralised pyramid, cooperative of units and integrated corporation are four typical collaborative structures and together present a relevant conceptual model for classifying knowledge-intensive enterprises.

6.3.6   Growth horizon

Comparable to the relation between corporate strategy and structure, is the link between corporate strategy and growth an obvious one. Not only is there much academic literature on corporate growth and development, but it is high on the management agenda as well. Next to this, the definition of corporate strategy as governing the corporate development process puts the growth mode and horizon in the centre of attention. The property related to growth that the KIE is pursuing is named 'growth horizon' and is defined as: *the direction of growth the enterprise is predominantly pursuing, in terms of its relatedness to the core business.*

Analysis of cases: growth horizon	
CreaStudio	The company intends to extend its service offering and geographical scope.
InnoService	The enterprise searches for growth in nearby businesses, with an organic model.
AdaptIT.com	When the market is defined broadly (IT or e-business) the pursued approach can also be considered as 'market penetration'. But, the enterprise is continuously looking for new product/market combinations that are related to the current business. The development history since company inception also underlines this development through nearby markets / segments.
VERYSoft	Through releasing new modules and according new functionalities, the enterprise is aiming to grow rapidly in related fields of business.
SolveTix	SolveTix follows an opportunity driven growth logic aiming for nearby, related market segments.
Linux	The organisation is naturally evolving and therefore growing into related areas of activities, e.g. into operating systems for other hardware devices.
TelEquip	The current strategic focus is on market penetration and globalisation through organic modes of development.
MachOne	MachOne is aiming to grow in its current and nearby markets segments. It pays considerable attention to R&D.
CoolSystem	Growth is pursued mainly in nearby businesses, e.g. new products, vertical integration (deeper integration of the customer chain) and more regional markets.
InnoMobile	The enterprise is following a diversification strategy through organic growth (including partnerships and networks) into related market segments.
DriveSupply	DriveSupply aims for growth in nearby business through customer oriented innovation.
GlobalCar	GlobalCar pursues concentric growth, in nearby geo-product-market segments.

Table 6-10: Cross-case analysis – growth horizon

The literature on growth and development [e.g. Zook & Allen, 2003; Beinhocker, 1999; Karnani, 2000; Ansoff, 1979] mainly discusses either the various theoretical options that enterprises have for realising growth [e.g. organic / internal growth, strategic alliances or mergers & acquisitions] or try to determine lessons learned from past growth performance [e.g. Bötzel et al., 2004]. Also the direction of growth in the value chain is discussed [e.g. diversification, integration, among others].

As shown schematically in the figure, following types of growth horizon are constructed:

- *Defend and extend current core / business*: Growth is aimed for in the core business and its extension (or defence). Example: market penetration.
- *Growth in nearby businesses*: Growth is aimed for in nearby businesses (product or market similarity). Examples: globalisation; vertical integration; related diversification.
- *Growth in distant businesses*: Growth is aimed for in faraway businesses. Example: unrelated diversification.
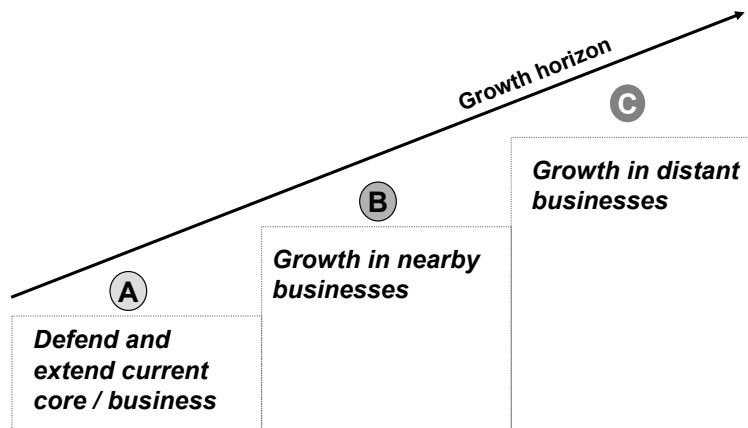
Figure 6-12: Context Property #10 'Growth horizon'

We can observe in the case studies that a key aspect of growth is not only the direction or mode of growth, but more the intention behind growth that differentiaties between KIE. The conceptual model suggested for this property determines this intention behind growth and the relatedness with the current core business. The three types of growth relate to the underlying nature and profile of the enterprise. Actually, the growth in distant businesses is not observed in the case study enterprises. However, the pro's and con's of unrelated diversification are much debated in practice and theory alike and it is a well known type of growth.

Thus, the growth horizon relates to a core domain of strategy and corporate development. Three forms of growth horizon are constructed, i.e. defend and extend current core business, growth in nearby businesses, growth in distant businesses. The intention to grow in nearby businesses is observed in all but two case study enterprises.

6.3.7   Adaptive strength

The adaptive strength is a context property for the internal environment of the knowledge-intensive enterprise and is defined as: *the capacity of the organisational system to adapt to changing environments (internal & external), as determined by the proactive and reactive strengths.*

Analysis of cases: adaptive strength	
CreaStudio	The company is agile in responding to customer demands and picking up new (local) needs in the region.
InnoService	The enterprise is proactive in setting up a new type of service. It is traditionally more responsive in attending to customer demand.
AdaptIT.com	The enterprise is strongly focussed on picking up the latest technological developments and according needs of customers in the broad e-business market.
VERYSoft	VERYSoft puts considerable emphasis on proactive technological research and customer driven innovation.
SolveTix	SolveTix, as a small enterprise driven by a strong strategic intent, is able to pick up and react to external opportunities quickly.
Linux	The organisational system is quick in picking up signals and transforming them into new technological developments. As such the network is highly responsive, opportunity driven.
TelEquip	Compared to high external dynamics, the enterprise is vulnerable in terms of adaptation. There are forces towards customer driven innovation and increased agility.
MachOne	MachOne is strong in reacting quickly to customer needs.

CoolSystem	The company is proactive mainly through technological innovation and is oriented on responding to customer needs quickly.
InnoMobile	The enterprise is very proactive in pursuing change, mainly through high technology innovations. It is also doing much for continuously tracking and responding to customer needs.
DriveSupply	The enterprise is highly responsive to customer demand, but is also proactively generating innovative solutions.
GlobalCar	The technology-intensive enterprise is providing continuous innovation, but struggles to quickly respond to changes.

Table 6-11: Cross-case analysis – adaptive strength

Adaptation is a much debated concept in strategy literature [e.g. Haeckel, 1999; Kaufmann, 1993; Beinhocker, 1998; Chakravarthy, 1998]. It can be described as the process through which a living system adheres to and aligns with its environmental conditions (of the ecosystem). Along the work of Haeckel, adaptive strength is the property of the living system that is determined by the ability to be both reactive and pro-active in dealing with change. Based on the two aspects proactive and reactive strength, following forms of adaptive strength are constructed [concept based on Haeckel, 1999].
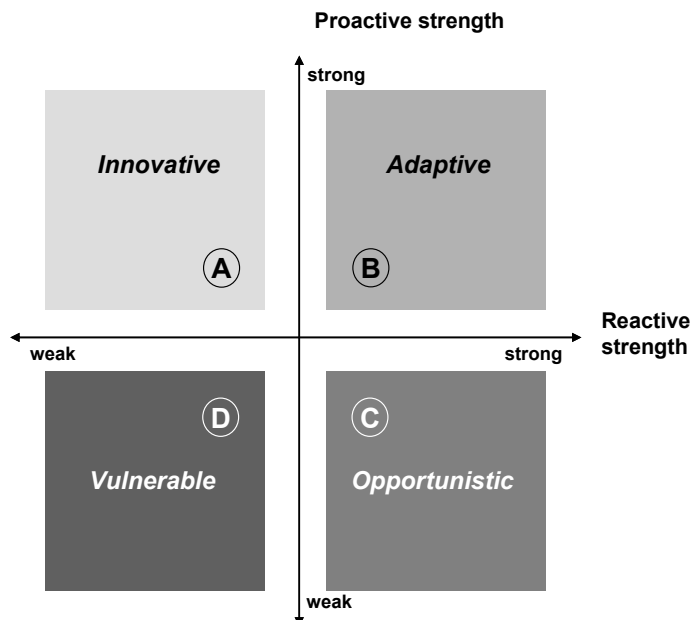
Figure 6-13: Context Property #11 'Adaptive strength'

As shown schematically in the figure, these types of adaptative strength are defined as:

- *Innovative*: strong in anticipating change and acting proactively, but weak in reacting to external signals to change.
- *Adaptive*: strong in both reacting and being proactive.
- *Opportunistic*: strong in reacting to external signals to change, not very proactive
- *Vulnerable*: low level of adaptivity to change signals.

Internal (as well as external) change can have many different causes and effects: change can be organic or non-organic in nature; change can be designed and planned or emerge 'naturally'; change can imply growth or decline; change can be incremental or radical; change can be caused through for example restructuring, re-organisations, mergers, acquisitions, alliances, change in key people (e.g. CEO) in the enterprise, technological innovations, new business models, etc. etc. To deal with these changes requires a truly adaptive capability in all aspects of the living system such as e.g. formal and informal

organisation, processes, people, values & beliefs, leadership, technological infrastructure and skills.

All these types of adaptive strength can be observed in the cases. With such a volatile and dynamic environmental change pattern, adaptive strength is a relevant determinant for KIE. Moreover, the forms of adaptive strength as provided by the conceptual model of Haeckel [1999] provide a clear classification scheme for KIE contexts.

6.3.8   Summary: reflection on internal environment properties

We have thus based on the cross case analysis identified that the internal environment of knowledge-intensive enterprises can be characterised by the properties: corporate maturity; value proposition; resources advancement; units of activity diversity; collaborative structure; growth horizon; and adaptive strength. Next to the empirical evidence of our study on knowledge-intensive enterprises, most of these properties (with hindsight) can be related to rich and vast domains of (general, i.e. non-KIE) organisational theory.

The knowledge-intensive enterprise in the living systems lens is a living system (see chapter 3). It consists of the main elements people, resources and activities. The properties for the internal environment can be easily linked to these elements. The units of activity diversity and collaborative structure properties relate mainly to the way in which activities are divided and the structure of relations between them. The resources advancement relates to the elements of people and resources. The way the KIE adds value to its stakeholders is determined by the value proposition property. The properties corporate maturity, growth horizon and adaptive strength cover the way all elements relate and develop together. The corporate maturity is determined by the state of the whole living system in its lifecycle. The adaptive strength is a combined property of the whole system and describes the vitality of the living system. Growth horizon mainly deals with the way the KIE envisions its future and the intention it has in terms of growth and development.

In this way a holistic set of properties is constructed, which are all known and can be linked to existing strategy & organisation theory. The case studies how these these various concepts are implemented for the specific contexts of knowledge-intensive enterprises. The properties cover both dynamic and static features of the KIE. Thus, in line with the living system lens and the orientation points of this research, a number of properties have been constructed that characterise the CSS context. The set of internal context properties can be found comprehensively in a tabular overview in the appendix B.

6.4   Corporate strategy system functions

The corporate strategy system is part of the overall knowledge-intensive enterprise system. The corporate strategy subsystem has a number of primary tasks in the KIE related to the formation and realisation of corporate strategy, just like for example a production subsystem has primacy within a producing enterprise to manufacture the end goods. When viewed through the living system lens, the functions of a corporate strategy system can be compared to the way an organ fulfils certain functions within a body. But what exactly are the functions of a corporate strategy system? This paragraph aims to determine this and thus to find answers to one of the guiding questions of this research, as posed in chapter one: *what functions do corporate strategy systems fulfil in KIE?* In order to explore the possible functions of the corporate strategy system in a knowledge-intensive enterprise, the cross case analysis is conducted in the same way as for determining context properties (see

previous two paragraphs), and as was described in the methodology chapter and in the introduction of this chapter. The following presents the synthesis of CSS functions grounded in the case analysis and in the strategy literature. For each CSS function, the main pieces of empirical evidence and core literature will be presented. More detailed references to the theory can be found in the appendix E.

6.4.1 CSS function: providing purpose

"Senior managers must convert the contractual employees of an economic entity into committed members of a purposeful organization" – Bartlett & Ghoshal, 1994, p.81

A knowledge-intensive enterprise has been defined (see chapter 2) as a purposeful system. But what gives the KIE its purpose? In other words, how does the KIE determine:

- What the KIE *was*: e.g. history, experience;
- What the KIE *is*: e.g. meaning, mission, reason for being;
- And what the KIE *should be*: e.g. intent, ambition, vision, aspiration.

The first function of the corporate strategy system that deals with these issues is named 'providing purpose' and can be described as: *providing the enterprise with a meaning and a global sense of direction.* The way in which this function of providing purpose is fulfilled in the cases is highlighted comprehensively in the following table.

Analysis of cases: providing purpose function	
CreaStudio	The CSS function with primacy for corporate development lies in providing more clarity and making the future direction of development explicit for the company. CreaStudio is looking to provide some system and structure in the processes of discussing and sharing a common sense of direction. Ideas and a future vision that exist currently in the head of the entrepreneur will be shared among the employees. In this way CreaStudio looks to influence more strongly the corporate development process and establish the forming enterprise.
InnoService	Oriented on establishing a shared 'new business idea', the new model of InnoService. Providing purpose involves an entrepreneurial vision of the future, opportunities in a globalising economy and many internal discussions involving stakeholders, especially the company management and employees. The key function of the InnoService corporate strategy system.
AdaptIT.com	The management team aims to keep an eye on the big picture, also during day to day activities. There is alignment between individual aims and the corporate purpose through regular goal agreement sessions.
VERYSoft	The explicitation of strategic direction is an integrated element of the planning cycle and is a way of providing meaning ('company values') and making the general direction clear to all involved.
SolveTix	Corporate 'strategy' lives as a common sense of direction and is concretised through everyday decisions.
Linux	Through the entry and exit of various volunteers and other stakeholder groups involved, there is a dynamic evolution of the overall purpose that the organisation fulfils. The purpose in this case should be more regarded as an 'amalgam' of individual motivations and stakeholder interests. Intrinsic motivation and recognition among peers are some of the elements driving volunteer participation.
TelEquip	The corporate strategy system plays a role in providing purpose for the enterprise, e.g. it reviews the mission, vision and goals for the enterprise and its units. Also the longer term, big picture of change and the potential impact on the enterprise is discussed.

MachOne	MachOne's purpose is to deliver customised solutions involving complex machinery. The main function of the CSS lies in formulating an explicit 'global strategy' of the enterprise, which will involve medium to long term objectives and the integration of departments.
CoolSystem	One function of the CSS is to align the purpose of the various units with the overall corporate purpose.
InnoMobile	The provision of direction and meaning to the whole enterprise is done through the development of direction statements ('Bible'). Also, positions are taken on key strategic themes (topics not predetermined).
DriveSupply	The purpose of the enterprise is discussed and captured within the 'strategic frame'.
GlobalCar	Longer term planning and envisioning is part of a bigger process of corporate planning.

Table 6-12: Cross-case analysis – CSS providing purpose function

This analysis across the cases displays how the 'providing purpose' function is fulfilled in the case studies. The providing purpose function can (with hindsight) be related to the literature. In the strategy literature, the provision of purpose to an enterprise is described in various ways. Weick [2001] for example describes *sense making* as a key management task. Other authors describe related concepts such as: *developing strategic intent* [Prahalad & Hamel, 1989]; *defining mission statements* [e.g. Hellriegel & Slocum, 1991; de Wit & Meier, 1998; Cummings & Davies, 1994]; *strategic envisioning* [e.g. Collins & Porras, 1996; Rowe, 1994; Wilson, 1992; Grove consultants, 1996]; or *establishing strategic rules* [Eisenhardt & Sull, 2001]. Weggeman [1995] describes providing purpose as the *development of collective ambition* of an organisation. Collective ambition is the combination of mission, vision, objectives and/or strategy that are broadly supported inside the organisation and are eagerly aimed for and lived after. Ambition development is about making individual ambitions explicit and developing them by subsequently integrating them in a consistent organisational ambition. Finally, Ackoff [1974] has defined the concept of *purposeful systems* (see chapter 2) and, in this line of thought, Bartlett & Ghoshal [1994] and Odomirok [2000] describe the determination of *corporate purpose* as one of the core management tasks. Corporate purpose, in their view, is the amalgam of motivations and intentions of the people of the enterprise. Corporate purpose is the shared opinion of the living community of people on what the enterprise was, is and should be. Even though different words are used, we can learn from this brief overview that the phenomenon of purpose is broadly described in the strategy literature.

Combined with the case analysis, we can therefore conclude that the 'providing purpose' is a relevant function of the corporate strategy system for a knowledge-intensive enterprise, with a direct impact on its corporate development process. In literature and in cases, the 'providing purpose' function consists of such *tasks* as: identifying current position (and history) of the enterprise; envisioning a long term development horizon; developing purpose; and establishing a common sense of direction. It is interesting to note that the cases also show us that this CSS function can be fulfilled in various ways.

6.4.2   CSS function: building resources

"Superior performance will be based on developing a competitive distinct set of resources and deploying them in a well-conceived strategy." - David J. Collis and Cynthia A. Montgomery [1995]

Knowledge-intensive enterprises can be divided in three groups (see chapter 2) with subsequently human talent, information and technology as their critical resources. The

function of the corporate strategy system that relates to the development of these strategic resources is called 'building resources' and is described here as: *selecting, developing and leveraging strategic resources.* The following table provides an analysis of the way this CSS function is fulfilled in the various cases.

Analysis of cases: building resources function	
CreaStudio	The competitive advantage of this consultancy lies in the knowledge and experience of its consultants and designers. Through hiring, firing and developing the employees' skills and through dedicated participation in knowledge sharing networks, the enterprise is building strategic resources.
InnoService	People and their skills are the key resources of InnoService. Building of resources is therefore a matter of developing (e.g. training) and extending (e.g. hiring) the skillbase. The building of resources is oriented towards the new unfolding purpose of the enterprise. With the purpose being more and more established, there is increased focus on growth through replication and resources building.
AdaptIT.com	People and their skills are the prime resources the enterprise has. The corporate strategy system is oriented on continuously matching new fields of technology business with the skills of its employees. The aim is to identify emerging customer needs and offer qualified services to them. The key function of the AdaptIT.com corporate strategy system.
VERYSoft	In the strategy map and business plan definition resources building receives considerable attention. The building of resources in an adaptive manner is the key function of the corporate strategy system in this growing enterprise.
SolveTix	There is much attention for the latest technology developments and the possibility of those technologies to deliver new customer value. Selection of technology occurs in an informal and ad hoc (opportunistic) manner.
Linux	The development and testing of resources is done through natural selection mechanisms, as individual programmers are moving in and out of the organisation. Resources are built with fast collaborative, knowledge creation mechanisms.
TelEquip	The corporate strategy system has a corporate function of identifying critical competencies for the enterprise, selecting areas of technological and business innovation, as well as facilitating the advancement of resources in the various business units, e.g. towards a knowledge enterprise vision.
MachOne	MachOne is paying considerable attention to the development of competencies, especially technical ones, through R&D.
CoolSystem	With high R&D investments and a strategy of technology leadership, CoolSystem strongly focuses on technological development and innovation.
InnoMobile	Innovation and technology development are crucial to InnoMobile's strategy and performance. There is extensive focus throughout the enterprise on e.g. selecting innovative technologies and solutions. However, decisions are taken where they are concerned (e.g. R&D), typically not in corporate planning process.
DriveSupply	Within corporate planning core competencies are analysed and determined. More detailed planning of resources is conducted in the business plans of the units, of which aspects are integrated in the overall corporate plan.
GlobalCar	The leverage and development of corporate resources, such as e.g. human resources and technology, are an essential part of the corporate strategic discussion.

Table 6-13: Cross-case analysis – CSS building resources function

Also in the literature, the role of resources for corporate strategy has been studied intensively, for example as part of the *dynamic capabilities* school [e.g. Katzy, 2001] that has been suggested by Volberda & Elfring [2001] to be one of three synthesising strategy schools. The strategic importance of resources has been highlighted by proponents of the *resources-based view of the firm* [Grant, 1991], followed by the *knowledge-intensive view of the firm* [Grant, 1997]. Paauwe shows that especially *strategic human resources*

management is of vital importance to the enterprise. In his view, human resources should be considered in combination with strategy as the two aspects that determine corporate performance, because: *"the creative and unique blending of the two* (strategy & human resources) *can contribute to a sustained competitive advantage and viability of the organization in the long run."* [Paauwe, 2004, p.4] Related tasks and concepts have been described by other authors such as: *intangible assets* [Itami, 1987], *core competencies* [Prahalad & Hamel, 1990], and *strategic resources* [Barney, 1991; Grant, 1991]. The related view on the context debate has been described in chapter 2 as the 'inside out' or 'capability-based' view of the firm. In this view, the main reasoning goes that, in order to stay competitive, enterprises must continuously invest in and upgrade their corporate resources. However good those resources are today, they need to be leveraged with effective strategies into attractive businesses in which they can contribute to a competitive advantage. Because all resources depreciate throughout time, an effective corporate strategy requires continuous investment in order to maintain and build valuable resources. Especially for knowledge-intensive enterprises the intangible resources are crucial and depreciate faster [Weggeman, 1999] than in probably any other types of business.

Based on the literature and the analysis of the case studies we can thus observe that building resources is a relevant function of the corporate strategy system in knowledge-intensive enterprises. Moreover, the building resources function can consist of a number of *tasks* of the corporate strategy system such as: identifying current strategic resources; selection and priorisation of resources investments; developing and leveraging of strategic resources. The CSS function contributes to sustainable corporate development by identifying, selecting and developing resources in order to make best possible use of those corporate resources.

6.4.3   CSS function: positioning competitively

> *"Strategy entails choosing, and a company will be successful if it chooses a distinctive strategic position that differs from those of its competitors"* – Markides, 2001, p. 229

Knowledge-intensive enterprises, as other enterprises, face competition; sometimes tough, sometimes less so. The function of the corporate strategy system that relates to the determination of a competitive position is called 'positioning competitively' and is defined as: *determining a sustainable competitive position of the enterprise in its environment.* The analysis of this function in the case studies leads to following insights.

Analysis of cases: positioning competitively function	
CreaStudio	Through the process of defining the mission and direction of the company more formally, the enterprise is aiming also to define a clear distinguished position in the (regional) market.
InnoService	The establishment of a company purpose goes hand in hand with a repositioning in the markets. Positioning competitively involves informal mechanisms for understanding the new competitive reality and defining the new model of the enterprise accordingly.
AdaptIT.com	The enterprise takes a rational and highly responsive approach to positioning competitively, through an informal but intensive scanning for opportunities and taking appropriate competitive actions.
VERYSoft	Competitive positioning in the dynamic market and subsequent provision of value added to stakeholders are discussed in the strategic planning processes.

SolveTix	This function is reflected in the strong focus on delivering value to current and potential new customers and the identification of their needs. Also SolveTix's position in value exchange relationships with partners, suppliers and shareholders is an aspect of decision making.
Linux	Although also here there are no formal mechanisms in place for positioning, the nodes in the stakeholder web (e.g. at the commercial ventures) keep a continuous track of developments in the competitive marketplace, such as related to other operating systems and their functionalities.
TelEquip	A strong focus on product/markets dynamics and competitive innovation is due to hyper competition and turbulent markets. The enterprise is more and more geared towards delivering customised solutions, which involves identifying customer & market dynamics and initiating change processes accordingly. Positioning competitively is the key function of the TelEquip corporate strategy system.
MachOne	The continued delivery of customer value in a competitive manner is a key mechanism for corporate development.
CoolSystem	There is the analysis of customers' satisfaction every three years, which CoolSystem uses mainly to determine their position in relation to the competition.
InnoMobile	The automotive sector is a highly competitive arena. InnoMobile has a distinct strategic position in the market. The orientation on competitive advantages and delivering unique value to customers is integrated in all decision making processes. Also participation in joint ventures, alliances and other networks is discussed within CSS.
DriveSupply	The corporate strategy system addresses two focal questions related to the positioning against competition in the strategic frame.
GlobalCar	The aggregated corporate position within its environment is an essential issue addressed in the corporate planning processes.

Table 6-14: Cross-case analysis – CSS positioning competitively function

In the literature there are various studies that can be linked to the function of positioning competitively. Proponents of the *positioning school* (see chapter 2) argue that the establishment of a distinctive position in the industry is a core strategic challenge for any enterprise. In the related *outside-in view* on the context debate, strategy development is argued to be primarily about establishing a disctinctive competitive position. As the key author in this view, Porter [e.g. 1980, 1985, 2001] underlines the importance of *establishing and maintaining a distinctive strategic position* by following fundamental principles such as starting with the appropriate purpose, defining a way of competing that delivers unique value to customers, and having consistency of direction. The essence of Porter's model is that the structure of industry determines the state of competition within the industry and therefore sets the context for an enterprise's conduct, i.e. their strategy. The concept of strategic positioning is recently described by various authors and extended by such concepts as: *dynamic positioning* [Markides, 2001], *excelling in value disciplines* [Treacy & Wiersema, 1993], *choosing strategic options* [Hax & Wilde II, 2001], and *creating competitive configurations* [D'Aveni, 2001].

Especially in fast evolving or newly opening industries it might not always be clear (in comparison to mature and established industries) who are the customers and what they expect, as well as who will be the direct competitors [Porter, 2001]. Also competitors might shift over time. In a narrow view, positioning is only about establishing a distinctive position in relation to competitors. In a broader view, the position within a broader environment is considered and includes the position in *value exchange relationships with all stakeholders*. For example according to St. Gallen [Müller-Stewens & Lechner, 2001], positioning implies determining the exchange relationships and their intensity with all stakeholders.

We can thus observe both in literature and in the cases that positioning competitively is a relevant and important function of the corporate strategy system in KIE. Some of the cases follow a more narrow approach with an orientation on competition only, whereas others display a broader view and include various stakeholders, i.e. most prominently customers and strategic partners. For this function, as with the previous functions, we can also observe the different levels of importance of the function and the different ways of fulfilling the function within the corporate strategy system.

The positioning competitively function in relation to governing corporate development thus implies the task of being better positioned within the (input & output) markets / value chain than the competitors in delivering value to stakeholders (especially customers), i.e. delivering value propositions that are economically and sustainably 'better' than competitors. As we observe in the cases and literature, this function relates to a number of corporate strategy system *tasks* such as: identifying current position in comparison to competitors; exploring ways for repositioning; and dynamically positioning within a changing environment.

6.4.4   CSS function: composing businesses

"Corporate strategy defines the businesses in which a company will compete." - Andrews, 1987

The function of the corporate strategy system that relates to the function of defining the businesses to be active in is called 'composing businesses' and can be described here as: *composing a balanced selection of businesses (or units of economic activity).* The way in which the composing businesses function is fulfilled in the various cases is analysed through the table below.

Analysis of cases: composing businesses function	
CreaStudio	The main units of activity inside CreaStudio are the client projects. A pattern of corporate activities emerges mainly naturally out of the dynamics of offering (by CreaStudio) and selection (by the clients) of new projects. Over time this can lead to realising new clusters of activity. CreaStudio entrepreneur and staff are (consciously or unconsciously) trying to influence this emerging pattern by paying extra attention to areas that are considered crucial, e.g. setting up activities in other countries.
InnoService	The main units of activity inside InnoService are projects (and five knowledge areas). The business composition function involves on the hand a natural selection of customer projects (selection through customers). On the other hand, InnoService tries to influence this selection process through encouraging the entry of more value adding areas of activity.
AdaptIT.com	The composing business function is fulfilled through a continuous selection of areas of activity where the enterprise should be active. The aim is to enter in and retreat from areas of business according to their maturity. In this way, there is a natural composition of business activities.
VERYSoft	The enterprise selects new areas of business rather organically, as an outcome of functional innovation driven by either technology development and/or new customer needs in related fields.
SolveTix	There is significant attention to the identification of new business opportunities. Selection of business opportunities (areas of economic activity) is done on an opportunity basis, when they occur.
Linux	Driven to a large extent by the interest of developers and the attention of users and their demands, projects are being set up, developed and phased out.
TelEquip	The corporate strategy system puts considerable emphasis on identifying, selecting and realising new fields of business. With a focus on organic development, the discussion zooms in on technological, product and business innovation.

MachOne	A pattern of activities emerges from the dynamics of identifying customer needs and responding with order fulfilment processes.
CoolSystem	CoolSystem systematically pursues corporate development and especially growth through innovation and internationalisation.
InnoMobile	Seems not to be an ongoing function that the CSS fulfils, but rather conducted ad hoc in project form (e.g. acquisition and divestures).
DriveSupply	The corporate centre acts as a management holding of the group's broad variety of business interests. The composition of a corporate portfolio is the key function of the corporate strategy system.
GlobalCar	The establishment of a balanced corporate portfolio is a key function of the corporate strategy system and is the main issue on the agenda in the annual, ongoing corporate strategic discussions.

Table 6-15: Cross-case analysis – CSS composing businesses function

In literature, corporate strategy is sometimes also described as holding or multibusiness strategy [e.g. de Wit & Meyer, 1998]. In this view, corporate strategy basically deals with the *composition of the corporate portfolio of businesses*. For example the work on the BCG growth-share matrix [Henderson, 1970; Hedley, 1977] displays the various business units on a graph of the market growth rate vs. market share relative to competitors and helps making strategic decisions across multiple business or product portfolios. In more recent studies, authors have extended the concept of composition and describe: *composing a portfolio of strategies* [Beinhocker, 2001] and *composing a portfolio of real options* [Gertner & Rosenfield, 2000; Luehrman, 1998; Williamson, 2001].

Knowledge-intensive enterprises, as any other type of enterprise, can always ask the question - should we stick to our knitting (our current business/-es)? Or, should we diversify into other areas of activity? Especially, in for example businesses where sectors of industry overlap or converging new technologies come up, many opportunities for new or uncharted business ideas can come up. In these kinds of situations, the decisions related to which areas of activity to be active in and in which not and with what level of intensity, seems highly relevant. Different portfolio composition decisions are described in literature such as *vertical integration* or *horizontal integration* [e.g. de Wit & Meyer, 1999]. Diversification of the portfolio of activities can be done [e.g. de Wit & Meyer, 1999; Gomez & Ganz, 1992; BCG] as *related diversification* or *unrelated diversification*.

We can conclude that the composition of businesses is a relevant corporate strategy system function with an important role in the processes of the KIE's corporate development, both in the cases and in literature. The function consists of a number of key *tasks* such as: evaluating the current set of businesses (units of activity); identifying new business opportunities; and establishing the level of investment in the different activities with a balanced portfolio. The corporate development process is driven by the *selection of businesses or areas of economic activity*.

6.4.5   CSS function: coordinating units of activity (UOA)

"Capturing cross-business synergies is at the heart of corporate strategy" - Eisenhardt & Galunic, 2000, p. 91

Apart from identifying the businesses (units of activity) to be active in, the coordination of the resulting units of activity is traditionally regarded as a core function of corporate strategy [De Wit & Meyer, 1998]. According to de Wit & Meyer coordination includes both the alignment between the corporate centre and the units, as well as the alignment of those units together.

A key aim in this regard is to increase *synergy* between the units of activity [Eisenhardt & Galunic, 2000], i.e. to make the whole more than the sum of its parts.

The related function is called 'coordinating units of activity' and is described here as: *coordinating the units of activity (and their development) of the enterprise.* The coordinating units of activity function of the corporate strategy system in the case study companies is analysed in the table below.

Analysis of cases: coordinating units of activity (UOA) function	
CreaStudio	There are mainly informal relationships across projects and between projects and the entrepreneur. The intention is to have more formal cross project coordination, e.g. knowledge sharing and lessons learned.
InnoService	The coordination function is fulfilled within and increasingly across the related areas of knowledge the projects belong to. Main mechanisms relate to priorisation of resources between projects and softer knowledge sharing.
AdaptIT.com	The coordinating function of the corporate strategy system is oriented on creating synergies between the various customer projects, which are the main units of activity for AdaptIT.com. Also the coordination of activities within the collaborative network is part of this function.
VERYSoft	The coordination between the geographical and functional units of activity is a main part of the management team (day to day) activities.
SolveTix	Through the opportunity driven approach, new business activities are decided upon when the opportunity arises. The main criterion is the fit to the overall strategic direction.
Linux	Coordination of the various projects occurs through the modular, product hierarchy structure and its interdependencies. Furthermore, there is bilateral and peer to peer informal alignment and decentralised cooperation, in case necessary or beneficial for project execution.
TelEquip	The corporate strategy system fulfils a modest role in creating synergies between the various units of activity, mainly focussing on identifying collaborative innovation opportunities and sharing knowledge and experiences.
MachOne	Remaining responsive to customers with functional departments poses a number of challenges.
CoolSystem	The coordination of units of activity is the primary function of the corporate strategy system at CoolSystem. The CSS enables the alignment of corporate and unit objectives. Moreover, the corporate centre is also involved in solving conflicts where they occur in the matrix organisation.
InnoMobile	CSS plays a key role in aligning all areas of activities. The intricate goal system (five levels x seven fields) provides a system for aligning and controlling the course of the enterprise and all its units.
DriveSupply	The corporate strategic planning approach tries to align the development of the business units with the corporate objectives through a strategy mapping.
GlobalCar	The alignment of units of activity (divisions) is done for example through the joint planning. Also the hierarchical goal system and measurement aims to keep a strong control on alignment of development processes.

Table 6-16: Cross-case analysis – CSS coordinating UOA function

In literature related tasks and concepts are described such as: *designing (adaptive) organisational forms* [Myers, 1996], *value constellations (designing interactive strategies)* [Normann & Ramirez, 1993], and *patching* [Eisenhardt & Brown, 1999]. Patching is a more dynamic concept of coordination and is the frequent remapping of businesses to fit changing market opportunities. It involves combining, splitting, exiting and transferring businesses within the corporation. Corporate executives set the lineup of businesses within the corporation and keep it aligned with shifting markets. Especially in the *embedded*

organisation perspective on the network debate (see chapter 2), the function of coordination is extended to include the broader corporate network of activities, i.e. the web of external relationships (e.g. joint ventures, alliances, value chain, etc.). In this regard, authors [e.g. Allee, 2002; Moschowitz, 1997; Camarinha-Matos, 2002; Warschat, 2005; Skyrme, 1999] discuss for example how to effectively *establish inter- and intra-organisational collaborative networks* and relationships.

In areas of business where markets and resources develop dynamically and unexpectedly, the coordination of activities so as to optimally match those resources with customer demands seems a relevant task for knowledge-intensive enterprises. Also, because of rapid science & technology development and diffusion, enterprises can not master everything by themselves and could rather focus on certain specialisations. Because of this, some argue that the need to collaborate with external partners increases for knowledge-intensive enterprises [Weggeman, 1999; Skyrme, 1999]. The task of coordinating not only 'internal' activities, but also cooperating and 'controlling' external fields of activities - in e.g. technology alliances, strategic R&D networks and research consortia – makes coordination even more daunting.

Although the enterprises display various primary units of activity (e.g. projects, business units and divisions), we can observe in the cases that coordination of the units of activity is a relevant function of the corporate strategy system. This is also supported by the various theoretical studies in this field. The cases display various ways in which this function can be fulfilled. We can observe various *tasks* that are related to this function such as: analysing current collaboration achievements and organisational model; exploring new organisational designs and unit goals; establishing alignment of corporate and unit goals; implementing new organisational designs (structure, processes, systems, etc.); and enabling collaboration and synergy between the units' activities. The coordinating function implies governing corporate development in order to achieve higher levels of synergy (higher than competitors and than markets) between the different units of economic activity.

6.4.6   CSS function: coping interactively

> *"The problems lie not in predictability, but rather more in coping with the unpredictable and unimaginable"*
> (translated from Dutch) – Moerman, 1999, p. 24

The definition of strategy as a deliberate plan and emergent pattern (see chapter 2) implies that there are elements of the realised strategy that can be foreseen and determined upfront (the deliberate plan), but that there are also elements that can not be foreseen or predicted (the emergent pattern). The function of the corporate strategy system that deals with the unpredictable and unimaginable can be called 'coping interactively' and is described here as: *optimising the corporate evolutionary process by preparing for and dealing with unanticipated events.* The coping interactively function is fulfilled in the cases in the following ways.

Analysis of cases: coping interactively function	
CreaStudio	The small company with much knowledge and contacts in the local market is able to quickly spot opportunities, e.g. changes in customer or new management services, and attend to them.
InnoService	There are informal and rather unconscious processes for picking up internal and external signals to change and acting accordingly.
AdaptIT.com	The enterprise has various informal but strong senses for picking up environmental signals and attending to them accordingly.

VERYSoft	Broad and active CSS participation of employees is stimulated. The whole idea behind 'Syndag' is to speed up evolution of the enterprise, by having everybody actively searching for improvement potentials.
SolveTix	The main focus regarding anticipation and reaction is, interestingly enough, not on threats and shocks, but rather more on chances and opportunities offered by new technology and customer needs.
Linux	Through the open boundaries and broad reach of the network, relevant signals for change are continuously sensed early and in a spontaneous, self organising matter are transformed into action. The key function of the Linux corporate strategy system.
TelEquip	The coping interactively function is oriented towards dealing with the turbulences of the marketplace and involves some mechanisms for preparing for the future realities.
MachOne	There is considerable freedom for the department managers to act and 'self organise' their work. The main external event that MachOne is really anticipating is customer demand. The move towards a process oriented structure can be seen in the light of becoming more adaptive.
CoolSystem	The enterprise tries to align customer developments with new technological solutions. As a systems integrator it tries to respond to challenges in the supply chain when they occur.
InnoMobile	Through detailed gap analysis within the CSS, the enterprise is enabled to take corrective measures and optimise its systems. Preparation for future shocks is done in qualitative planning discussions.
DriveSupply	The interactive dealing with changes and opportunities in the environment is mainly done on the business units level, e.g. responding to customer demand, technological developments, etc.
GlobalCar	The flexibility in determining topics and dealing with them collaboratively (in joint planning teams) allows for dealing with strategic issues when they occur. Also, assessment and corrective action regarding operational efficiency leads to optimisation of development.

Table 6-17: Cross-case analysis – CSS coping interactively function

In literature the coping interactively function (with hindsight) can be related to various ideas and concepts. Idenburg [1993] describes *emergent strategies* as strategies that are flexible enough to adapt to the unexpected, but stable enough to be coherent. The problems related to making detailed predictions about the future are known for a longer time; see for example the *'environmental school'* of strategy (as described in chapter 2). But there is a recent intensified interest in this field, especially by researchers on *self organisation* and *complex adaptive systems*, such as the Santa Fe Center for Emergent Strategies. In the complexity research view it is basically impossible to develop a view of the future and formulate explicit objectives in an unpredictable environment. Rather the proposed approach is to react flexibly, opportunistic and accidentally to unpredictable environments. In this view [e.g. Stacey, 1995] organisations are regarded as nonlinear, network feedback (complex adaptive) systems. The central evolutionary and transformational processes in organisations are ones of spontaneous self organisation as *"new strategic direction, renewal, transformation, and innovation can only emerge. They must be negotiated in real time and cannot be arranged in advance".* Related concepts and functionalities that are studied and described in this view are for example: *emergence* and *complex-evolving systems* [Mittleton-Kelly, 2003], *swarm intelligence* [Bonabeau & Meyer, 2001], *grass roots strategy making* [Wall & Wall, 1995], and *revitalization (changing the ways of change)* [Pascale, 1997].

For knowledge-intensive enterprises - especially in complex, dynamic organisations or in turbulent markets - it seems indeed difficult to predict long term developments and the ability

to prepare the enterprise in dealing with changes as they occur seems a relevant function of the corporate strategy system. Also in organisations with a high amount of professionals in the primary value adding activities, such as in professional services, the argument of leaving as much room to individuals to make their own decisions might seem a solution [Alvesson, 1995] and coping with unpredictable events when they occur would become a key mechanism for corporate development.

Based on the literature and cases we can conclude that the main logic behind the coping interactively function thus seems to be: a KIE has made a plan, has built a vision of the future, and has selected resources and units of activity – and then something unexpected happens. How does an enterprise deal with this? How is the enterprise prepared? In the coping interactively function, corporate development is governed by the ability of the enterprise to evolve in a natural and smooth manner. Corporate development goes hand in hand with smaller and bigger shocks and the coping interactively function implies the task to anticipate or react to these events in a best possible way.

We can observe that the case study companies have indeed various ways to cope with unpredicted and unimagined events. Even though, few enterprises put strong emphasis on this in the corporate strategy system. We can observe in the cases a number of related *tasks* for the corporate strategy system such as: identifying internal and external signals for change; evaluating and learning about evolution opportunities; evolving and optimising the organisational behaviour; sensing and responding; and learning and improving.

6.4.7 Summary: reflection on corporate strategy system functions

This paragraph started with one of the guiding research questions asking for the functions that corporate strategy systems fulfil in the knowledge-intensive enterprise. Functions are the coherent sets of main tasks that the corporate strategy system fulfils as a subsystem of the knowledge-intensive enterprise. The function a corporate strategy system fulfils is tied to the purpose this subsystem has within the knowledge-intensive enterprise. The corporate strategy system is metaphorically regarded as the navigational system of the KIE. When comparing the enterprise with a flowtilla of ships, the corporate strategy system is actually navigating the 'fleet' of units of activity. Therefore, especially the role of the corporate strategy system in relation to the units of activity of KIE, i.e. how they are navigated, is crucial in this regard.

As we could observe in the cases, the navigational role of the CSS in relation to the KIE's primary units of activity can have various facets, as it implies: to steer, to integrate, to cooperate with, to support, to facilitate, to determine, to direct, to control, to improve, to create, to decide on, to select, to analyse, to send signals to, to keep an overview (big picture) of, to balance interests between, to react on, to anticipate, to motivate, to lead, to find compromises between, to represent, etc. etc. [the units of activity]. However, through an analysis across the case studies and supported with the strategy literature, we have argued in this paragraph that all of these (and other) smaller and bigger roles relate to the following primary functions, as depicted in the following figure:

- *Providing purpose*: providing the KIE with a meaning and a global sense of direction.
- *Building resources*: selecting, developing and leveraging strategic resources.
- *Positioning competitively*: determining a sustainable competitive position of the enterprise in its environment.
- *Composing businesses*: composing a balanced selection of businesses.

- *Coordinating units of activity*: coordinating the units of activity (and their development).
- *Coping interactively*: optimising the corporate evolutionary process by preparing for and dealing with unanticipated events.

We have observed that these functions are fulfilled in all cases. However, there are clear differences on the intensity and the ways in which they are fulfilled. Moreover, the importance of a function depends strongly on the case study, i.e. on the particular context of the knowledge-intensive enterprise. It is interesting to note that we can see in each case that there is one clearly dominating function.
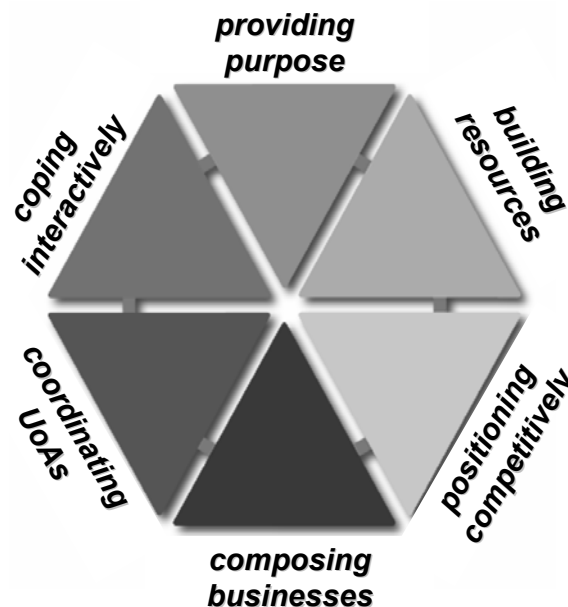
Figure 6-14: Primary functions of the corporate strategy system

The primary functions, as depicted above, of corporate strategy systems therefore represent significant distinctions between knowledge-intensive enterprises. The main distinguishing aspect is how these functions are really conducted in an enterprise, with which emphasis and in which way, as they are not found in the same level of detail in the cases.

The specific constellation of how these CSS functions are fulfilled in a KIE therefore is a clear way to distinguish between different CSS in different contexts. In the following chapter, we will argue that the form of the corporate strategy system will depend on the function it fulfils within its context (i.e. the knowledge-intensive enterprise).

6.5   Corporate strategy system processes

In the description of the case studies (see chapter 5), we could already observe a number of very interesting and elaborate process models for the corporate strategy system. For example, the TelEquip and PowerSupply cases display very clear processes for the annual corporate planning cycle. In the state of the art chapter we reviewed a number of studies addressing corporate strategic planning process matters. In this paragraph we will explore and compare the various case studies with a specific focus on such process aspects. By doing so, we intend to answer one of the initial research questions, i.e. *what processes do corporate strategy systems fulfill in knowledge-intensive enterprises?*

A process has been defined in chapter one (see table 1-1) as a logical sequence of activities conducted by a system in order to fulfil its function. The cases display a wide variety of concrete activity sequences that are conducted as part of the corporate strategy system. Like

TelEquip and PowerSupply, the GlobalCar corporate strategy system also shows us a systematic sequence of process steps nicely shaped according to various phases of the year with clear roles and responsibilities for various groups of people and units inside the enterprise. Another contrasting example, however, is the SolveTix case where the main deliberate planning activities are grouped into a two day workshop for the management team and the CSS for the rest of the year involves ad hoc decision making during day to day activities. In other words, there is a wide variety of process models in KIE corporate strategy practice.

We will review the cases by using the same procedure as in the previous paragraphs (see also introduction paragraph 6.1). Through this cross case analysis, we aim to find a synthesis in the form of the main processes that a corporate strategy system conducts in a knowledge-intensive enterprise. The literature related to the CSS processes can be found in appendix F.

6.5.1   CSS Process: Corporate intelligence

When we compare the corporate strategy system processes in the case study corporate strategy systems, most of them typically start with such activities as: identification of information sources; gathering of information; conduction of analysis; preparation of reports; and communication of analysis results. Similar types of activities are referred to in the literature as (among others): strategy analysis; assessment; sensing; or scanning.

We can therefore identify these types of activities as the first CSS process, which we call 'corporate intelligence'. Corporate intelligence can be defined as: *identifying, gathering, analysing, preparing and communicating information that is required for strategy formation (related to the CSS functions)*. The way this process is conducted in the cases is analysed in the table below.

Analysis of cases: corporate intelligence process	
CreaStudio	CreaStudio is looking to set up more systematic activities for gathering and analysing especially information about its customers and the markets. Currently, experience and learning from customers and other contacts guide the activities inside CreaStudio.
InnoService	Activities related to information acquisition and analysis take place through informal means or through direct experience and is especially oriented on picking up customer needs and customer relevant developments.
AdaptIT.com	There is a strong informal process of scanning for emerging customer needs and areas of technological development.
VERYSoft	Intelligence is gathered for enterprise improvement possibilities, through the collection of ideas ('Idea collecting and refinement'). Also business plan data are analysed (incl. turnover, forecasts, costs, etc.).
SolveTix	Information is gathered and analysed in an informal manner and consists mainly of customer needs, technology possibilities, also financial results are prepared.
Linux	Through the interconnectivity and transparency of the communication infrastructure (mainly the web), information is gathered and shared quickly.
TelEquip	The corporate intelligence process is important, especially in identifying opportunities related to customers & solutions. But also longer term trends are observed and analysed.
MachOne	More systematic analysis of customer needs and business opportunities is aimed for.

CoolSystem	There is systematic analysis conducted regularly (differing time intervals) especially in support of goal management and measures achievement within the different units; but also competitive and technology analysis is conducted as part of the CSS.
InnoMobile	There is extensive analysis supporting the strategy definition activities, both qualitative and quantitative nature, throughout different levels of the enterprise.
DriveSupply	Broad and systematic analysis is conducted. To a large extent analysis from the business plans is used, however, also additional corporate strategic analysis is conducted.
GlobalCar	Extensive strategic analysis is conducted on three main levels: corporate, unit and joint (varying strategic topics).

Table 6-18: Cross-case analysis – CSS corporate intelligence process

When comparing corporate intelligence processes in the cases, we see that they can be conducted in a deliberate, organised manner (e.g. GlobalCar and DriveSupply) or in an informal, emergent way (e.g. Linux and MachOne). Also various types of information can be gathered and analysed, such as information about markets, technology, customers and competition. The content seems to a large extent determined by the priority of the CSS functions in the KIE. In other words, when for example positioning competitively function is the primary function (see e.g. TelEquip case), the corporate intelligence process will emphasise information about competitors, markets and the enterprise's strategic position.

We can conclude that corporate intelligence is a relevant process of the corporate strategy system in KIE. The outcome of this process is an analysis of strategic topics related to the corporate strategy system functions.

6.5.2   CSS Process: Strategy formation

The next process can be called 'strategy formation' and is defined as: *evaluating options, setting priorities, taking decisions and integrating them into a coherent corporate strategy.* Similar terminology as found in cases and literature can be (among others): decision making; option selection; strategic planning; strategy creation; strategy building; strategising; and strategy formulation. Strategy formation is conducted in the cases in the following ways.

Analysis of cases: strategy formation process	
CreaStudio	The strategy as a pattern of decisions is formed emergently as a process of natural selection of client projects.
InnoService	Strategy formation activities are mainly related to enfolding and discussion of the entrepreneurial vision and establishing a commonly shared mental frame of the enterprise (the purpose, or model of the business).
AdaptIT.com	The deliberate strategy is formed in a number of workshops with the management team and documented in a plan. However, the strategy also forms as an emergent pattern of decisions, as shaped through operational decisions.
VERYSoft	Strategy formation contains two steps: strategic map definition; business plan writing.
SolveTix	Strategy lives mainly as a coherent sense of direction. Strategy (as a pattern of decisions) is formed in the day to day decisions that are taken by the management team of SolveTix. An annual strategy workshop is a moment for reflection and seeing the bigger picture.
Linux	There is a lack of formal strategic planning processes. However, decisions that can be considered as 'strategic' relate mainly to product performance.
TelEquip	Within the context of collaborative, multi actor decision making there is significant time and effort spend on the political process of compromise finding.

MachOne	The key strategic decisions are made by the entrepreneur, not in a formal planning process but whenever they occur.
CoolSystem	The corporate strategic decision making focuses on aligning all the different units of activity – product divisions, customer centres and regional companies.
InnoMobile	Both long term and short planning is conducted regularly. There are three key strategic planning processes: quantitative planning (indicators), qualitative planning (strategic topics) and financial planning.
DriveSupply	Corporate strategic planning follows a clear roadmap cycle. Moreover, the business planning is conducted in a harmonised manner with one planning process model.
GlobalCar	The corporate planning follows a number of steps: Strategic dialogue; Preparation of strategic business discussion; Strategic business discussion; Corporate strategy meeting; Strategic dialogue (debriefing).

Table 6-19: Cross-case analysis – CSS strategy formation process

As we can clearly observe in the cases, the strategy formation process can encompass a number of typical activities such as option evaluation, priority setting, decision making and strategy formulation. Also, the form and content of the strategy that is formed in this process differs pro case, again, we believe as a result of the function of the corporate strategy system. The outcome of the strategy formation process is a decision on specific strategic topics and the overall course of action (either deliberate or emergent).

6.5.3   CSS Process: Strategy realisation

After the strategy is formed, it can be realised. The process related to realising strategy (in whatever form or shape) can be called 'strategy realisation' and is defined as: *communicating strategy, preparing its execution, setting up strategic (change) initiatives and leading action for development of the enterprise.* This process is also referred to as (among others): strategy implementation; strategy execution; change management; business transformation; strategic projects; and strategy communication. The strategy realisation process is conducted in the cases in the following way.

Analysis of cases: strategy realisation process	
CreaStudio	The pattern of decisions is realised emergently as a process of natural selection of client projects.
InnoService	The key process of the InnoService corporate strategy system: execution is considered to be more important than planning. Decisions are taken as part of the day to day operations.
AdaptIT.com	The main orientation of the management team is on execution (strategy realisation). Both project managers and the management team take decisions during day to day activities, which are communicated and executed.
VERYSoft	Strategy realisation happens through the tasks planning mechanism that are direct outcomes out of the improvement point analysis. Another mechanism for strategy realisation is the extended participation of employees in planning and the extensive communication of the strategic direction of the enterprise.
SolveTix	'Strategy' is realised in the actions that follow as a result of day to day decisions taken by the management team.
Linux	Strategy in this case is an emergent pattern of action. The pattern emerges through the dynamic interactions of the members and stakeholders involved in the Linux community.
TelEquip	The strategy realisation process is to a large extent the responsibility of the business units. However, the corporate strategy system plays a role in brokering and catalysing some of the key change processes.

MachOne	The realisation of 'strategy' (more a pattern of decisions in this case) lies mainly in the hands of the departments and their managers.
CoolSystem	Realisation of strategy resides mainly with individual and cooperative of units of activity; however, the corporate centre plays a role in realisation.
InnoMobile	Realisation of strategy is organised and done on five levels. Through the system of goals and measures, the implementation is controlled and aligned. Detailed planning (implementation) is done decentralised.
DriveSupply	The implementation of strategy is left to the units of activity following their detailed business plans. There is some control over realisation through the monitoring of performance.
GlobalCar	Mixed planning teams (representatives from corporate, division and business unit) enable the realisation of corporate strategy. The system of key figures throughout the entire corporation provides direction for realisation.

Table 6-20: Cross-case analysis – CSS strategy realisation process

Typical activities that are part of the strategy realisation process in the case study corporate strategy systems are: strategy discussion and communication; implementation planning, strategic projects definition and execution; and change management. The outcome of this process is the realisation of the strategy (as a deliberate plan or pattern of activities).

Note that for the cases where strategy is formed in an emergent and informal manner, the distinction between strategy formation and strategy realisation can not really be made. In other words, when strategy is an emergent pattern of decisions, strategy formation and realisation is the same.

6.5.4   CSS Process: Performance management

A natural next process is refered to in cases and literature as (among others): strategy control; performance measurement; monitoring; measuring; tracking progress; and reporting. We can call this process 'performance management' and define it as: *keeping track of strategy realisation, measuring progress (against targets) and possibly correcting strategy.* The performance management process is conducted in the cases in the following way.

Analysis of cases: performance management process	
CreaStudio	CreaStudio keeps track of the performance of its main units of activities (client projects) in an informal way. Any unexpected events within the projects are dealt with in an ad hoc manner.
InnoService	Although there is no monitoring of strategy realisation (like there is no formulated strategy), there are some checks of project performance.
AdaptIT.com	The performance management process consists mainly in the shape of formal and informal regular checks of targets achievement, both on enterprise and employee level.
VERYSoft	Measurement of performance is done according to the four perspectives of the Balanced Scorecard. For the (short term) future the introduction of a management cockpit application with more systematic follow up of indicators is foreseen.
SolveTix	Performance measurement takes place mainly in the form of financial reporting. Monitoring of general progress and crucial projects is done informally.
Linux	Similar to the 'scientific method', there are short and transparent feedback loops about the quality of the outcome (product source code) of work and necessary adaptations are done in short term intervals.
TelEquip	The performance management activities focus both on operational, financial control and proactive measurement of strategy & goals realisation.

MachOne	Apart from financial reporting, MachOne is looking forward to introduce business process oriented performance monitoring.
CoolSystem	Performance management includes financial reporting and target achievement monitoring.
InnoMobile	Apart from financial detailed results reporting, performance is measured systematically in seven pre determined fields (like a balanced scorecard). If necessary, corrective measures are initiated.
DriveSupply	Apart from extensive financial reporting, there is an integrated performance measurement according the goal system and derived measures & indicators.
GlobalCar	Apart from detailed financial reporting, there is measurement of key figures and indicators throughout the enterprise.

Table 6-21: Cross-case analysis – CSS performance management process

The cases show that there a number of typical activities that are part of the performance management process: monitoring strategic projects and strategy implementation; corporate control; progress measurement; gap analysis; and corrective measures introduction. The main outcome of the performance management process is more transparency and control over corporate development and performance.

6.5.5   Summary: reflection on corporate strategy system processes

Corrpoate strategy system processes are the main sequences of activities that take place within the corporate strategy system. Through following the cross case analysis procedure and comparing the outcomes with the strategy literature (see appendix F), we have identified following processes of the corporate strategy system in knowledge-intensive enterprises: corporate intelligence, strategy formation, strategy realisation and performance management.
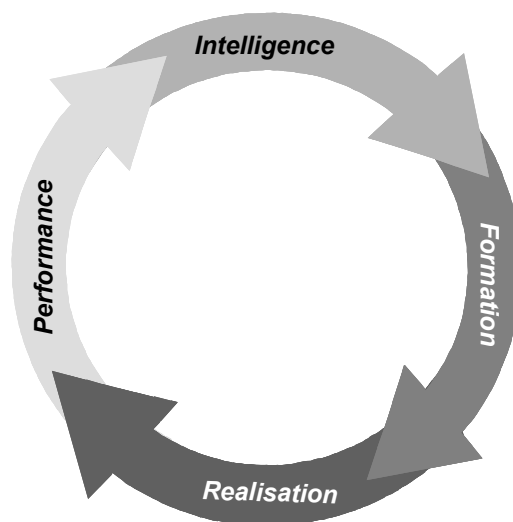
Figure 6-15: Corporate strategy system processes

In the cases, many different activities have been observed to take place throughout the corporate strategy system. Examples from the cases of such activities are: coaching, communicating, data collecting, information analysing, discussing, workshop conducting, negotiating, decision making, voting, prioritising, stimulating, cooperating, communicating, planning, supporting, helping, measuring, tracking, etc. etc. The synthesis proposed is that all activities can be related to the four core processes and that every KIE's corporate strategy

system has these processes in some form or another. In other words, every CSS process model can be reduced to these core processes.

This synthesis does well fit the strategy literature. Like in the cases, every textbook on corporate strategy has its 'own' process model. However, looking at the similarities instead of differences, a similar sequence of activities as suggested can be found. In this synthesising model, as depicted above, these processes can take place in parallel, but can also be understood as a continuous learning cycle, similar to a PDCA loop (Plan-Do-Check-Act) or basic problem solving cycle. Even in enterprises where the corporate strategic planning process is not well established, a general management loop like this one can be observed.

We can conclude by noting that the cases display different ways of conducting these processes. The main differentiation between different knowledge-intensive enterprises is determined by how intensively the processes are conducted and in what way they are formed and organised. However, these differentiations are rather superficial and therefore in the following section we will focus on categorising these differences between corporate strategy systems more systematically and determining a set of distinctive corporate strategy system properties.

6.6   Corporate strategy system properties

After our understanding of the primary functions and core processes that corporate strategy systems fulfil in knowledge-intensive enterprises, we can now focus on the main differentiatiors between the various systems in practice. In this paragraph, we will explore the properties of the corporate strategy system and thereby aim to find answers to one of the starting questions of this research: *what distinctive properties characterise corporate strategy systems in knowledge-intensive enterprises?* The procedure that is followed is the one that is explained in paragraph 6.1 and that has been applied to the determination of the functions, processes and context properties. Again, the properties will be presented only with the main pieces of cross case analysis and (where relevant) our findings will be compared with the corporate strategy literature.

6.6.1   Strategy format

A strategy is defined as a deliberate plan or emergent pattern of decisions. In a number of the case studies, such as e.g. AdaptIT.com and TelEquip, the corporate strategy is embodied as a deliberate plan in a detailed report. In the Linux case, the corporate strategy is not something tangible, but lives more as a pattern of decisions. We call the property related to the actual form in which the corporate strategy 'lives' inside the knowledge-intensive enterprise 'strategy format' and define it as: *the physical form and level of specification of the corporate strategy.*

Analysis of cases: strategy format	
CreaStudio	A formally explicit corporate strategy does not exist. The strategy is a mental model and an entrepreneurial vision.
InnoService	The strategy exists as a mental model, a model of the future company. A detailed corporate plan is in the making.
AdaptIT.com	The corporate strategy exists as a detailed plan.

VERYSoft	The corporate strategy exists as a strategic direction and is made explicit in the shape of a strategy map & business plan, covering e.g. addressed market segments, new product modules and growth targets.
SolveTix	The corporate strategy mainly exists in the form of a strong common sense of direction.
Linux	The strategy 'lives' as an emergent pattern of decisions.
TelEquip	The enterprise defines the corporate plan in the form of various reports.
MachOne	The strategy is if anything embodied in the pattern of decisions, with some implicit guidance by the entrepreneurial vision.
CoolSystem	The corporate strategy is mainly a coherent direction statement with objectives (aligning the various units).
InnoMobile	The corporate strategy is embodied in the form of a set of principles in the so called strategy 'bible'. Moreover, there are more detailed plans and reports for detailed planning.
DriveSupply	The primary format of the corporate strategy at DriveSupply is a (documented) corporate plan, which includes the corporate portfolio, strategy maps and an overarching strategic frame.
GlobalCar	The format of the corporate strategy consists of an overall course of corporate development and is made explicit through numerous reports and plans, incl. e.g. corporate portfolio.

Table 6-22: Cross-case analysis – strategy format

Actually the details of proceeding for this property have been provided in paragraph 6.1 (see figure 6-1) as a general example. As mentioned there, the two underlying aspects of the strategy format property are the 'physical form' and the 'degree of specification'. The physical form can be either 'explicit' (e.g. InnoMobile case) or 'implicit' (e.g. CreaStudio case). The degree of specification can be either 'general' (e.g. InnoMobile case) or 'detailed' (e.g. AdaptIT.com case).
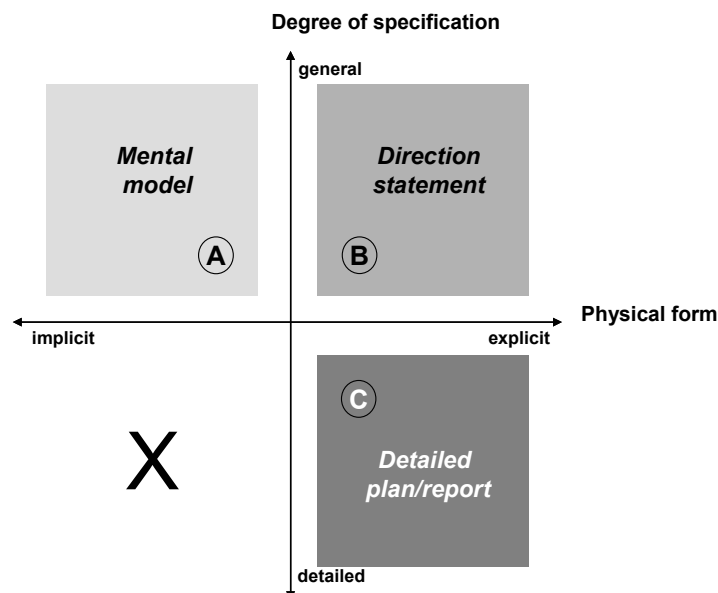
Figure 6-16: CSS Property #01 'Strategy format'

As depicted in the figure, following types of strategy format are constructed:

- *Mental model*: the corporate strategy is a common mental model; is not made explicit and exists as a broad notion.

- *Direction statement*: the corporate strategy is an explicit but broad statement on the course of action, for example in the shape of a set of corporate targets, principles or guidelines.
- *Detailed plan/report*: the corporate strategy is made explicit and is detailed to a large extent, for example in the shape of reports.

The combination of a detailed but implicit strategy has not been observed in the cases. Also, no literature has been found to make a strong point in this direction. A good example of the mental model can be found in the SolveTix case – strategy as a common sense of direction. The strategy 'bible' as found at InnoMobile can be considered a direction statement. The corporate plan at DriveSupply and the business plan at VERYSoft are examples of the detailed plan/report.

6.6.2   Planning rhythm

Some knowledge-intensive enterprises, like e.g. CreaStudio, do not have planning events or meetings, but strategic decisions are taken when the situation requires this. Other KIE, such as e.g. TelEquip, have a detailed procedure that prescribes a logical annual sequence of planning events and activities involving numerous people and departments of the enterprise. The pattern of planning activities can be captured by a property 'planning rhythm' that is defined as: *the frequency and regularity of corporate planning activities.*

Analysis of cases: planning rhythm	
CreaStudio	There are no formal planning activities; decisions are taken according to the situation.
InnoService	Planning is done in an ad hoc manner, when the situation requires it.
AdaptIT.com	The formulation of the strategic plan and its derived action plans is all based on a few workshops.
VERYSoft	There is an annual planning cycle.
SolveTix	'Strategic' planning is done on a day to day, ad hoc basis. There is an annual (one day) workshop for more formal planning activities.
Linux	There are no formal strategic planning activities. Important decisions are based on consensus and mainly relate to technical matters.
TelEquip	There is an annual planning process, which culminates around workshops with the business units.
MachOne	There are no regular planning events or activities.
CoolSystem	There is an annual planning cycle involving the corporate centre and the units of activity. In addition, central planning team conducts singular strategic projects.
InnoMobile	There is an annual planning cycle.
DriveSupply	There is an annual planning cycle.
GlobalCar	There are ongoing, ad hoc and annual planning activities.

Table 6-23: Cross-case analysis – planning rhythm

Overlooking the analysis of the planning rhythm in the cases, two aspects can be distilled for this property. The occasion of planning activities distinguishes between 'event' (e.g. strategy workshop of SolveTix) and 'continuous' (e.g. joint planning teams of GlobalCar). The pattern of planning activities distinguishes between 'irregular' and 'cyclic' activities. By combining these two aspects following forms of planning rhythm are constructed:

- *Ad hoc*: planning is done ad hoc, i.e. in crisis type meetings.
- *Strategic projects*: planning activities are conducted in the form of projects.

- *Rotating planning cycle*: planning follows a rotating planning cycle; most common is the annual planning cycle.
- *Planning events*: planning occurs periodically but centres around certain events, e.g. annual strategy conferences, meetings or workshops.
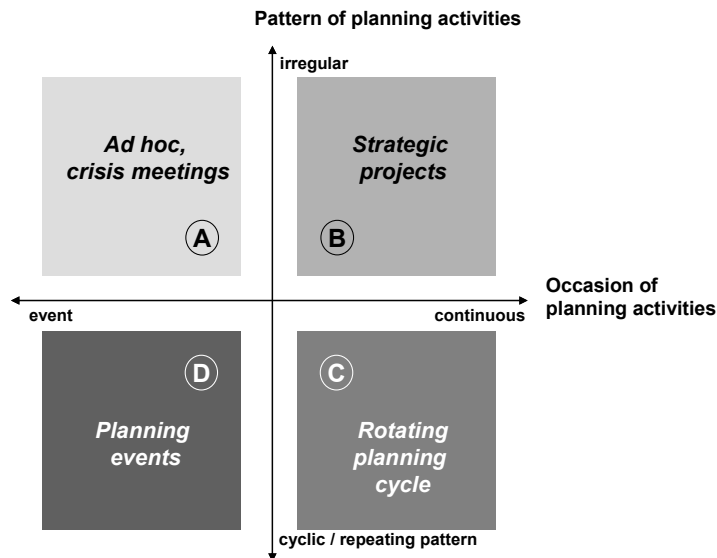
Figure 6-17: CSS Property #02 'Planning rhythm'

The irregular and event based planning is observed in the cases where there is no formal planning process, e.g. CreaStudio and MachOne. The strategic projects model can be found at all larger cases, however not as dominant model. The rotating planning cycle is best exemplified by the DriveSupply case, but also CoolSystem, GlobalCar and InnoMobile posses a cyclic and continuous planning process. A good example of the periodic event model is the SolveTix case, where there is one formal planning workshop every year.

6.6.3   Time horizon consistency

Strategy is typically put in relation with a long term view. But what exactly is *long* term? Also, some cases clearly demonstrate that within the corporate strategy system a significant part of the discussion revolves around shorter term issues, such as the budgets for the next year. The property that deals with the time horizon of the corporate strategy is called 'time horizon consistency' and is defined as: *the amount of years that the corporate strategy looks ahead and the emphasis put on consistency between different time horizons.*

Analysis of cases: time horizon conistency	
CreaStudio	The time horizon of corporate development is short term; it is tied to the time horizon of the customer dynamics.
InnoService	The main focus is on execution and operations. The time horizon is therefore rather shorter term and oriented on client developments. The future model of the enterprise is more a longer term view.
AdaptIT.com	The 'business plan' has a five year horizon and in strategic workshops longer term issues are addressed. However, there is an equal amount of attention for short and medium term issues.
VERYSoft	The time horizon of the corporate plan is 3 years.
SolveTix	The primary focus is on the short to medium term, 'action doing'.
Linux	The main orientation of coordinative discussions is related to short / medium term issues, e.g. technical discussions and product performance.

TelEquip	Although both short and long term issues are addressed, there is an emphasis on short term issues, mainly due to the tough times in the markets.
MachOne	The management team has a short to medium term orientation; with a strong emphasis on delivering products / solutions to customers.
CoolSystem	Short, medium and longer term aspects are considered in corporate strategic planning. The main focus is on longer term.
InnoMobile	The long term plan has a time horizon of 12 years, of which 6 are 'planned' and another six years for which an outlook is given. This plan is rotating, meaning it is updated every year. For the detailed planning, there is a one year time horizon.
DriveSupply	The corporate planning has a two plus three year's time horizon: two years planned in detail and three years more globally.
GlobalCar	The time horizon of planning differs for the different businesses and can range somewhere between 3 to 10 years. Corporate financial planning is done with a 3 years' time horizon.

Table 6-24: Cross-case analysis – time horizon consistency

Apart from the distinction between short/medium term and long term views, an important distinction is also found in the consistency between the various time horizons. By combining these two aspects, following types of time horizon consistency are constructed.
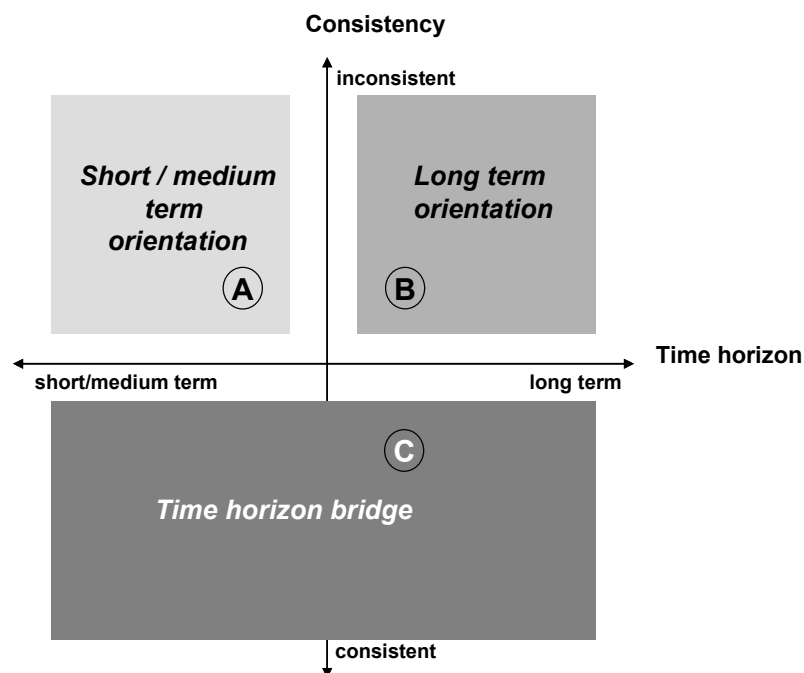
Figure 6-18: CSS Property #03 'Time horizon consistency'

These time horizon consistencies can be described as follows:

- *Short / medium term orientation*: short to medium term view is predominant: 1 -4 years.
- *Long term orientation*: longer term view is dominant: 5 or more years.
- *Time bridge*: both short, medium and long term views are considered; consistency is emphasized.

Cases where the short/medium term view seems to be dominant are for example CreaStudio and MachOne. A solely longer term orientation is hard to identify, but the InnoMobile case - even though they also have shorter term planning - seems to come closest to this (at least on the corporate level). A good example of the time bridge model is the GlobalCar case with their up to 10 years plan matched with 3 years detailed planning.

6.6.4   Corporate strategy orientation

Apart from the time horizon, another difference in basic orientation of corporate strategy systems relates to the distinction between a strategic and an operative orientation: distinctions between a stronger focus on the parts of planning that are considered more 'strategic' (e.g. corporate policies, strategic position, etc.) or 'operative' (e.g. business plan, corporate budget, etc.). This distinction can be tied to the distinction quantitative versus qualitative: distinctions between a stronger focus on either quantitative data or more qualitative material. The property that relates to the general orientation of the corporate strategy system is called 'corporate strategy orientation' and is defined as: *the nature of the issues that are primarily covered in the corporate strategy system.*

Analysis of cases: corporate strategy orientation	
CreaStudio	The corporate activities are oriented towards the specific problem solving tasks for customers in projects. Dialogue about strategic issues might be done informally and qualitatively.
InnoService	The main discussions and outcomes around corporate development are qualitative. The entrepreneurial processes are strategic in nature.
AdaptIT.com	Both strategic and operative issues are addressed in the processes of the CSS.
VERYSoft	The strategy map is more qualitative in nature and has a tactical / strategic focus. More quantitative, operative aspects are included in the annually revised business plan, such as performance indicators and financial forecasts.
SolveTix	The orientation is primarily qualitative, on 'tactical' decisions and opportunity driven. There is everyday results orientation, which is supported by financial plans.
Linux	The orientation of the community is on qualitative aspects, e.g. elegance of code.
TelEquip	The corporate strategy processes include both quantitative and qualitative aspects, both strategic and operative issues. There is strong emphasis on customer driven innovations.
MachOne	The entrepreneur and his management team focus on day to day, mainly qualitative decisions.
CoolSystem	Corporate strategy is qualitative in orientation, but uses quantified data for support.
InnoMobile	The orientation of the corporate planning is mixed: it is both qualitative and quantitative in nature; it links the operative with strategic perspective.
DriveSupply	The orientation of corporate planning is mixed (both quantitative & qualitative). However, the focus on the corporate level seems to be more on establishing a qualitative, strategic direction.
GlobalCar	The orientation of the first semester is on strategic, qualitative planning and the second semester focuses more on quantitative, operative planning.

Table 6-25: Cross-case analysis – corporate strategy orientation

This property is modelled as a continuum. However, as is observed in the cases, this is not a black or white distinction. But rather, is it a distinction in regard of the primary orientation of the corporate strategy.
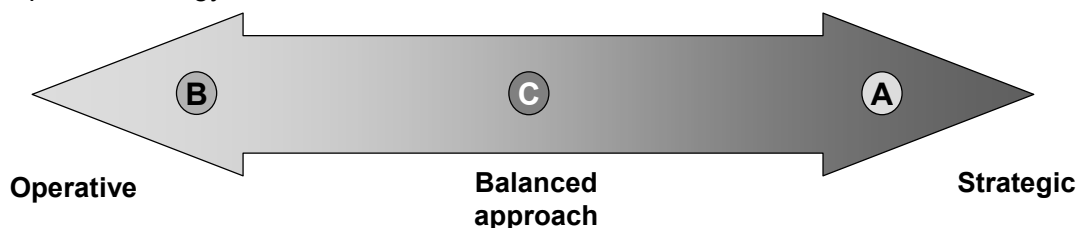
Figure 6-19: CSS Property #04 'Corporate strategy orientation'

As shown in the figure, for this property following forms of orientation are determined:

- *Strategic / Qualitative*: corporate strategy system focuses primarily on qualitative and future looking issues, such as e.g. long term trends, visions, scenarios.
- *Operative / Quantitative*: corporate strategy system focuses primarily on quantitative and day to day issues, such as budgets, market figures, etc.
- *Balanced approach*: corporate strategy system integrates harder and softer types of issues.

All cases demonstrate some elements of both extremes. However, some are clearly much stronger operatively focussed – such as e.g. CreaStudio and SolveTix – whereas others are much more strategic in nature – such as e.g. InnoMobile (again on corporate level). A balanced approach is found at for example GlobalCar with their two semester planning shift (strategic in the first semester, operative in the second semester).

6.6.5   Corporate planning formalization

The corporate strategy system is a corporate subsystem where activities are conducted. However, this does not automatically mean that all knowledge-intensive enterprises have formalised organisational arrangements for these activities. For example, there can be different levels of formalisation of the planning process itself. The property relates to the level of formalisation of the corporate strategy system is 'corporate planning formalization' and is defined as: *the degree of formalization of the corporate strategy system processes.*

Analysis of cases: corporate planning formalization	
CreaStudio	There are no formalised strategic planning procedures.
InnoService	There are no formal planning procedures installed.
AdaptIT.com	Although there is a rough frame of drafting a plan annually and regular follow-ups, there is considerable freedom in shaping the concrete planning activities.
VERYSoft	The planning process is formalised and follows an explicit methodology.
SolveTix	The corporate planning is informal and not systematic, with the exception of the annual strategic workshop.
Linux	There are no formal planning procedures.
TelEquip	Although only recently established formally, there are formalised planning procedures.
MachOne	The planning can be described as informal and non systematic.
CoolSystem	The planning process can be considered formal, as there is a process arranged for the annual planning procedure. However, there is flexibility in conducting the planning activities.
InnoMobile	There is a formal organisational structure for the corporate strategy function. Also, the annual process seems to be explicit and the topics to be addressed are pre determined.
DriveSupply	The corporate planning function is formalised, there are (two) organisational units and there is a detailed process model.
GlobalCar	The corporate strategy has formalised organisational arrangements and process models and systematically integrates different planning levels.

Table 6-26: Cross-case analysis – corporate planning formalization

This property can best be understood as a trait that an enterprise exhibits either not at all or to an increasingly higher level and is therefore conceptualised as a continuum, as depicted.
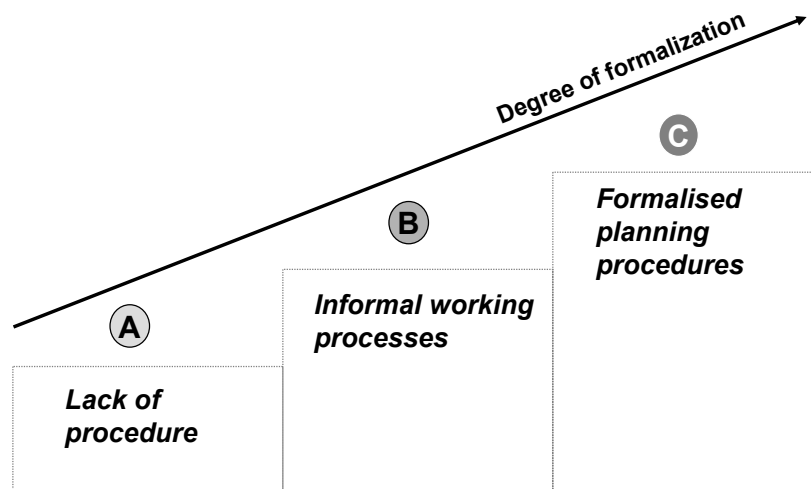
Figure 6-20: CSS Property #05 'Corporate planning formalization'

The levels of formalization can be described as follows:

- *Lack of procedure*: there is no formal corporate planning procedure defined.
- *Informal working processes*: there is a strategic planning process defined. But within this set frame, there are mainly informal working processes.
- *Formalised planning procedures*: there is a formal procedure for corporate planning and the different activities are conducted in a systematic and predefined manner.

The cases represent various levels of formalisation. A lack of procedure is for example found at CreaStudio and MachOne. Informal working processes can be found at the other two small companies SolveTix and VERYSoft (where the latter is clearly more formalised). And good examples of higher levels of formalization are found at for example CoolSystem, InnoMobile, GlobalCar and DriveSupply.

6.6.6   Organisational integration

Some knowledge-intensive enterprises, such as e.g. CoolSystem and DriveSupply, have a department or unit such as a corporate planning department or corporate development team, which has the organisational responsibility to support the corporate planning process. Others have a small team, one person, or no formal planning unit at all. Such possible organisational entity for planning can also be positioned in different ways, for example as an independent staff related to the board, or as a team within the corporate finance & control department, or as a single person inside marketing & sales, etc. The property related to the organisational structure of the corporate strategy system is called 'organisational integration' and is defined as: *the (formal) organisational unit inside the corporate structure that primary takes care of conducting planning activities.*

Analysis of cases: organisational integration	
CreaStudio	The main units of activity are the client projects. Project managers take responsibility for projects and client interaction. The management team takes care of the 'longer term'.
InnoService	There is no formal organisational arrangement for strategic planning.
AdaptIT.com	The management team takes all the strategic decisions and formulates the annual strategic plan.
VERYSoft	The main organisational responsibilities for corporate development lie with the entrepreneur and his management team.

SolveTix	The work of overlooking and steering the overall direction of development lies primarily with the CEO and his management team.
Linux	There are no formal organisation arrangements. There are face to face events, but most discussions are handled online.
TelEquip	The enterprise has a formal, central department with around 50 employees that reports directly to the CEO. Furthermore, there is an institutionalised committee for decision making.
MachOne	The entrepreneur and his management team take strategic decisions. The functional departments work out their own detailed planning.
CoolSystem	There is a central planning team that enables the strategy formation process, aligning the corporate centre and departments. The team reports directly to the board of directors.
InnoMobile	The corporate strategy system is driven by an organisational unit, which is part of headquarters, reporting to the board.
DriveSupply	There are two teams on corporate level that drive the corporate planning process, but the various units are also involved.
GlobalCar	The central corporate planning department is linked directly to the board of directors.

Table 6-27: Cross-case analysis – organisational integration

Reflecting on the comparison of the cases, four distinctive models are identified.
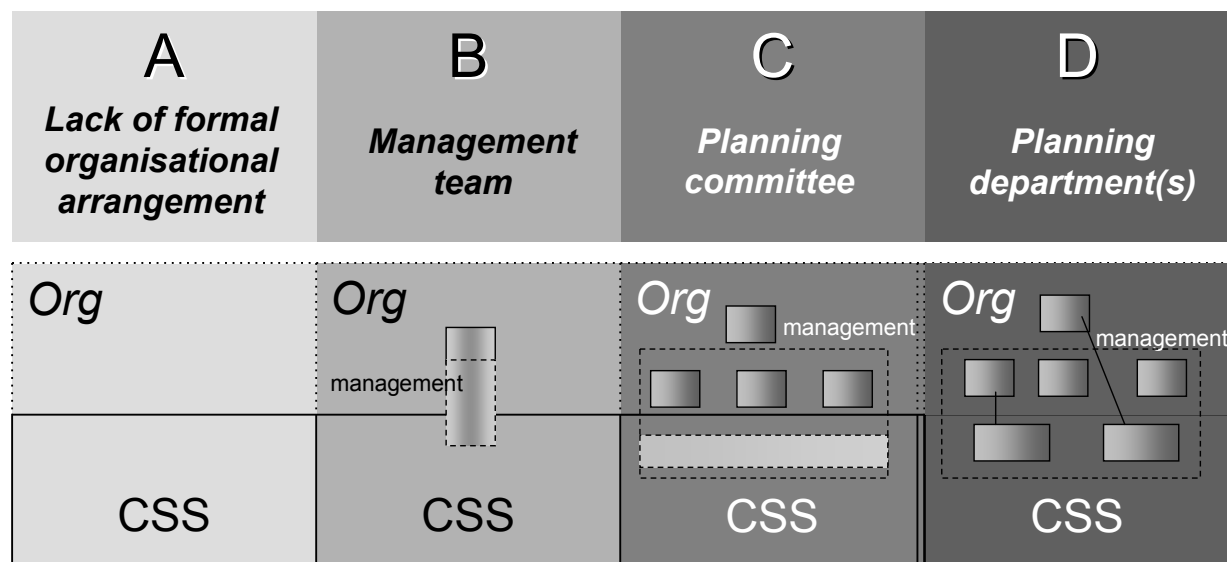
Figure 6-21: CSS Property #06 'Organisational integration'

These types of organisational integration can be described as follows:

- *Lack of formal organisational arrangement*: there is no formal organisational arrangement for the corporate strategy system.
- *Management team*: the management team takes on main corporate strategy processes. One manager (or assistant) might have some specific organisational responsibilities.
- *Planning committee*: there is a committee or team that is the main body for corporate strategy processes. This team might be temporary or has changing participation models.
- *Planning department(s)*: there is a fixed staff that has as its prime responsibility to conduct corporate planning activities. This department serves the management team / board of directors independently or might be located in for example controlling, marketing or finance departments.

The InnoService and Linux case are examples of enterprises with no formal planning organisational arrangements. The SolveTix case best demonstrates the 'management team'

model. The planning committee is observed in the TelEquip case. The fixed planning department seems to be the typical model for larger enterprises; at least the case studies show this model at the CoolSystem, DriveSupply, InnoMobile and GlobalCar cases.

6.6.7 Role of corporate central planning (CCP) unit

The corporate centre can play various roles in the corporate strategy system of the knowledge-intensive enterprise. A central planning unit does not play the same role in the CSS, for example it might conduct different activities and it might posses different levels of authority within the overall enterprise: it can be supportive and coaching, or it can be more dominating and steering. The property that relates to the role of corporate centre is called 'role of corporate centre planning (CCP) unit' and is defined as: *the prime role the (formal) corporate planning organisational unit fulfils within the organisation.*

Analysis of cases: role of corporate centre planning (CCP) unit	
CreaStudio	The entrepreneur plays a key role in guiding the organisation and integrating employees around a common vision.
InnoService	The 'corporate centre' (here: top management) has been focussed on developing and integrating the enterprise around the purpose of the company, i.e. a new position and vision of direction.
AdaptIT.com	The main focus is not on formulation, but on execution of the strategic plan and therefore igniting quick change processes involving all employees. Goal agreement sessions with employees constitute a key mechanism for realising change.
VERYSoft	The management team drives strategy development.
SolveTix	The main role of the CSS lies in the steering and guidance with an overall strategic direction.
Linux	The main role of the organisation leadership (the project leader and his maintainers) lies in providing a platform for communication and making decisions on technical aspects.
TelEquip	The main role of the central planning unit is facilitating the discussion between the corporate centre and the business units. Moreover, the unit is actively taking on collaborative projects.
MachOne	There is no formal planning team or person. The management team focuses on sharing all employees around their vision.
CoolSystem	The role of the corporate planning team can be described as supportive and enabling the cooperation between units.
InnoMobile	The role of the corporate planning department seems to be supportive and enabling for the corporate decision making process.
DriveSupply	The central corporate planning units support the board of management in directing the corporate portfolio as a management holding.
GlobalCar	The central planning unit is a strong and integrative function of the corporation, which is linked directly to the corporate development process.

Table 6-28: Cross-case analysis – role of CCP unit

Overlooking the diversity of possibilities in the cases, the following types of possible roles for the corporate centre can be determined:

- *Facilitation*: the prime role of the corporate centre planning unit lies in supporting and facilitating the units of activity.
- *Catalysation*: the prime role of the corporate centre planning unit lies in the catalysation of change processes of the corporation and its units of activity.

- *Integration*: the prime role of the corporate centre planning unit lies in leading people and integrating the organisation into a unified whole.
- *Directing*: the prime role of the corporate centre planning unit lies in controlling the different units of activity and directing their development.
- *Communication*: the prime role of the corporate centre planning unit lies in providing a platform for communication among the units of activity.
- *Brokering*: the prime role of the corporate centre planning unit lies in resolving conflicts (like mediators, diplomats) and aligning the development of the units of activity.

The planning departments in the InnoMobile and CoolSystem case take on a facilitation role towards the units of activity. The catalysation role is performed by the management team in the VERYSoft and AdaptIT.com cases. The integration role is performed by the management team in for example the InnoService case. GlobalCar and DriveSupply cases exemplify a directing role of the corporate centre. The communication role is observed in the Linux case. The brokering role can be observed in the planning departments in the TelEquip case.

6.6.8   Processs blueprint

There are various ways to conduct corporate strategy system processes. Corporate strategy (see definition) can be either a deliberate plan or an emergent pattern of decisions, or a combination of both. Some KIE, such as e.g. DriveSupply and TelEquip, have systematic and organised processes for 'producing' corporate plans. Other KIE, such as e.g. Linux and MachOne, have no planning processes, but have processes leading to the emergent pattern of decisions. The property that relates to this diversity in process organisational models is called 'processes blueprint' and is defined as: *the way the CSS processes are structured, as determined by the degree of flexibility and nature of processes.*

Analysis of cases: processes blueprint	
CreaStudio	Corporate development is determined as an emergent pattern of decisions and is self organised through day to day work.
InnoService	There are no predetermined CSS processes. Decisions are taken ad hoc.
AdaptIT.com	Planning processes follow a general pattern, but are not strictly adhered to. Planning is regarded as *"a controlled thought processes"*.
VERYSoft	Strategic planning is one of the main (ongoing) activities of the management team.
SolveTix	The 'corporate planning' is organised as ad hoc decision making (by the management team) and an annual workshop.
Linux	The pattern of decisions is emergent. Development activities are naturally selected as an outcome of developers' interests and user requests.
TelEquip	There is a clear blueprint for the five strategic processes – intelligence, strategy development, innovation, transformation and control. However, there is only a short tradition of following this process and in practice many decisions are taken in bilateral discussions between the centre and units.
MachOne	There are no systematic corporate strategy processes.
CoolSystem	The corporate strategy system combines an annual planning cycle with singular strategy projects and activities.
InnoMobile	The activities of the CSS are organised in an annual process.
DriveSupply	CSS processes are formalised and follow a preformatted bllueprint.
GlobalCar	The CSS organisation links planning processes on three levels and the central corporate strategy department is divided in several sub entities taking care of e.g. corporate portfolio, stakeholder strategies, product group strategies, etc.

Table 6-29: Cross-case analysis – processes blueprint

Nature of processes

deliberate

Process control Ⓐ

Contained creativity Ⓑ

Degree of process flexibility

rigid   flexible

Ⓒ

Self organisation

X

emergent
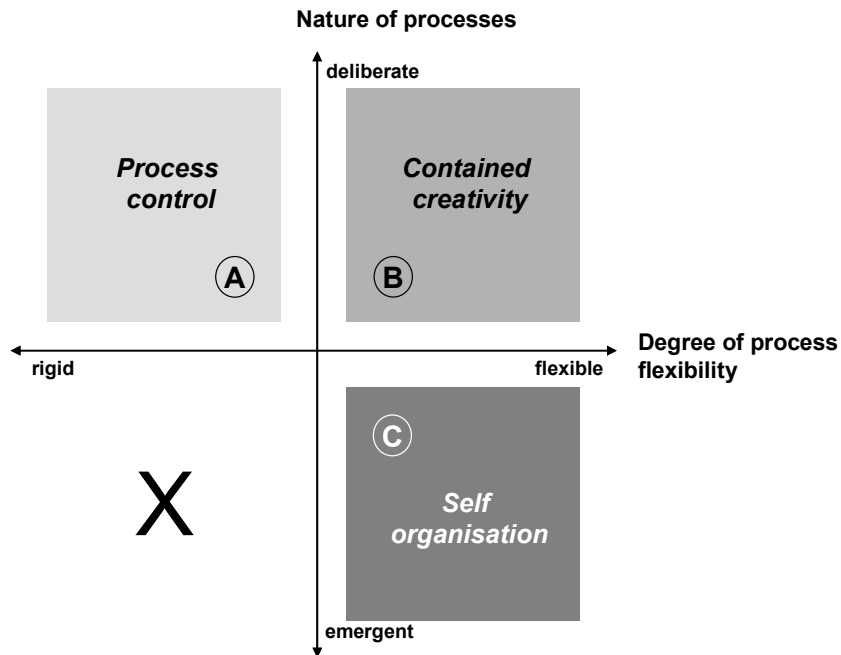
Figure 6-22: CSS Property #08 'Processes blueprint'

As shown in the figure above, following blueprints are determined:

- *Process control*: the processes are conducted in a predetermined manner and there is no room for changing the planning processes in case of unanticipated events.
- *Contained creativity*: the flow of processes follows a formatted design, but there is built in room for dealing flexibly with unanticipated (internal or external) events.
- *Self organisation*: the CSS processes do not follow any scheme, apart from self organisation.

The theoretical possibility of rigid but emergent processes are not observed in the empirical evidence and do not seem to be a realistic option. The distinction between 'process control' and 'contained creativity' is not easy to make in every case. However, the process control seems to be the dominant model in for example the TelEquip, InnoMobile, DriveSupply and GlobalCar case. The contained creativity is well exemplified by VERYSoft and to a lesser extent by CoolSystem. The self organisation model is found for example in the Linux and MachOne case.

6.6.9   Decision making flow

Strategy development has much to do with decision making (see definition of strategy). Some would even say that decision making is the core activity of corporate strategy formulation: *"corporate strategy is the pattern of decisions in a company".* [Thompson, 2001] Also some of the previous configuration studies (see chapter 2) are around decision making, such as e.g. Grandori's [1984] decision making styles. The property that relates to the way decisions are made within the corporate strategy system is called 'decision making flow' and is defined as: *the way in which strategic decisions are taken, especially regarding the relation between the CSS and the units of activity.*

Analysis of cases: decision making flow	
CreaStudio	Operative decision making is mainly decentralised (project managers).
InnoService	Although top management takes full responsibility in taking decisions, this is done thoroughly considering employee opinions and any big decisions are communicated extensively.
AdaptIT.com	Management team takes all the important decisions.
VERYSoft	The entrepreneur and his management team take decisions, based on a (continuous) dialogue with all employees.
SolveTix	With room for manoeuvring by the operational units, strategic decisions are taken by the CEO and management team.
Linux	Decisions are taken as part of the work in the units of activity (projects), driven by individuals.
TelEquip	The managers of the business units are the entrepreneurs and have profit/loss responsibility. There are also top down forces. In many of the key decisions, many actors e.g. from the TelEquip strategic committee are involved.
MachOne	There is top down decision making with room for departments to guide their activities.
CoolSystem	The main focus of the CSS is related to alignment of corporate and unit objectives. Strategy is formed by the board in cooperation with the unit managers.
InnoMobile	One main aim of the corporate strategy system is the integration of the bottom up and top down direction of development. The corporate centre provides a longer term strategic direction (i.e. policies & principles) for the units.
DriveSupply	There are both top down and bottom up aspects in the corporate planning process. The corporate level determines the strategic orientation and portfolio, the unit level the business plans.
GlobalCar	There are top down, bottom up and collaborative decision making processes within the CSS. Reflected also by the size and scale of the corporate centre, the top down view seems dominant.

Table 6-30: Cross-case analysis – decision making flow

When zooming in on the often theoretically discussed distinction between bottom up and top down styles of decision making, most cases display a combination of both directions. Therefore, a continuum between the theoretical poles seems an appropriate way to conceptualise this property, as depicted below.

Bottom up   **Balanced**   **Top down**
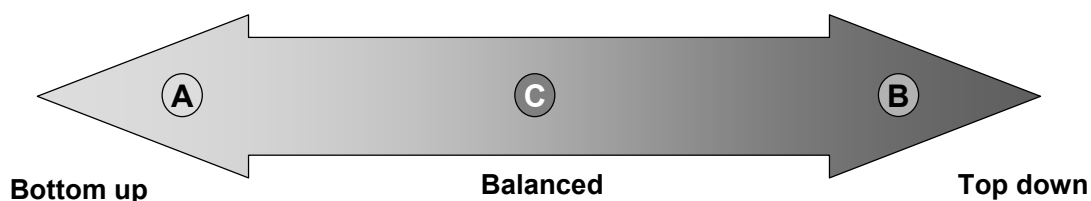
Figure 6-23: CSS Property #09 'Decision making flow'

Following three forms of decision making are thus constructed:

- *Bottom up*: the main strategic decisions are taken within the individual units of activity. The role of the corporate centre is rather modest.
- *Top down*: the main strategic decisions are taken by the corporate centre. The main role of the units of activity lies in implementing the decisions.
- *Balanced approach*: the main strategic decisions are taken in cooperation between the corporate centre and the units of activity. Alternatively, some decisions are taken centralised, others distributed.

This property should be understood as a continuum where each individual case can be positioned in between the two extremes. Although all cases possess at least some elements from both polar types, some tendencies or preferences can be uncovered in the cases. VERYSoft and MachOne provide examples of the mainly top down flow. The Linux case is the strongest example of a bottom up model. A balanced approach is for example found at InnoMobile.

6.6.10 People involvement

Overlooking the cases, various groups of people from the knowledge-intensive enterprise can be involved in the corporate strategy system, such as: the entrepreneur / CEO; further members of the top management team (e.g. management team, board of directors); a dedicated planning responsible, staff, team or department; unit of activity management (e.g. management of business units, projects, processes); technical matter experts (e.g. marketing or technology) and other employees; and externals (e.g. customers, suppliers, consultants, etc.). The property that is related to the involvement of these various groups in the CSS is called 'people involvement' and is defined as: *the scope of people involved in the corporate strategy processes and the intensity of their participation.*

Analysis of cases: people involvement	
CreaStudio	Everybody is involved in the realisation of the emergent pattern of decisions.
InnoService	When regarding the elaboration of the future vision, this has primarily been the work of the entrepreneur and other top managers. However, they have predominantly been focussed on other (operational) issues.
AdaptIT.com	Mainly the management team is involved in strategic planning. Their commitment is intensive.
VERYSoft	There is extensive involvement of people in the CSS.
SolveTix	The management team are the main people involved in planning.
Linux	There are few people, with a low level of commitment, engaged in 'planning' related activities. Many people involved are volunteers focussing on technical work.
TelEquip	Managers and specialists (planning & control) in both the corporate centre and the business units are involved with considerable effort and time.
MachOne	Mainly the entrepreneur takes key decisions.
CoolSystem	The main people involved are the central planning team, the executive board and the unit managers.
InnoMobile	The main 'work' in corporate planning is done by a small team. For the rest, it is top management and management of associations and units.
DriveSupply	Both top management and business managers are heavily involved, as well as their planning staffs.
GlobalCar	Strategic planning involves staff and management on different levels of the enterprise.

Table 6-31: Cross-case analysis – people involvement

As in the overall living KIE system, also in the corporate strategy system the most critical resource for its functioning is by far the human. The main reason being that strategy making is a process that contains highly human-intensive tasks - such as e.g. analysis, creativity, debate and cognition. Accordingly, there is a significant amount of literature paying attention to human resources in strategic planning. A good example of the human focus are the political and cognitive strategy schools of thought (see chapter two), which put the political discussion and cognitive processes in the centre of attention of strategising.

Apart from the scope of people involved in the corporate strategy system processes, the case studies display various levels of intensity of their involvement. The intensity of participation can range between 'weak' (see e.g. InnoService) and 'intense' (see e.g. TelEquip). When combining these two aspects, following levels of involvement are constructed.
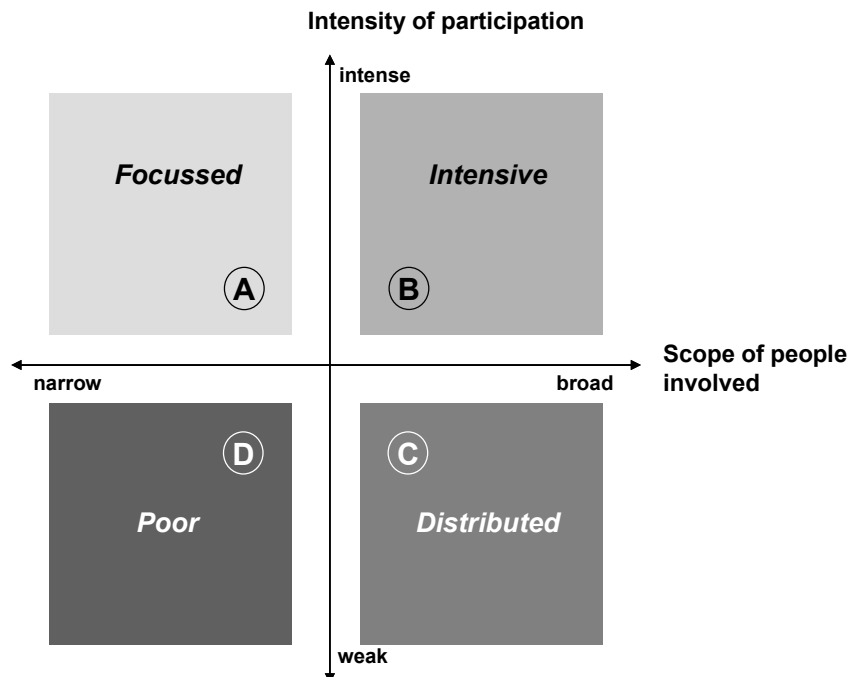
Figure 6-24: CSS Property #10 'People involvement'

As shown schematically in the figure, these levels of people involvement are defined as:

- *Focussed*: few highly involved groups.
- *Intensive*: broad and intense participation.
- *Distributed*: weak but broad involvement.
- *Poor*: narrow and weak involvement.

A good example of the 'focussed' involvement is the DriveSupply case, where it is mainly a small planning staff and the central management team that develops corporate strategy. VERYSoft is probably the best example of 'intensive' involvement where all employees are stimulated to become active and contribute. The 'poor' involvement has been observed in for example SolveTix, where there is no real planning process. The 'distributed' involvement can be exemplified by the TelEquip case.

6.6.11 Management responsibility

From the various groups involved in the corporate strategy system processes, there is a special role for the top management. Having responsibility for leading and managing the enterprise, they can be expected to have corporate strategy formation as one of their key jobs, as observed in the GlobalCar case: *"Board of Management … identifies and develops strategic planning for the company and coordinates this with the Supervisory Board".* The property that relates to the role of top management in the corporate strategy system is called 'management responsibility' and is defined as: *the amount of ownership and attention (e.g. in terms of their time) that top management has for the corporate strategy processes.*

Analysis of cases: management responsibility	
CreaStudio	The entrepreneur focuses on the big picture.
InnoService	Management does take full responsibility of strategic planning processes, but dedicate most of their time and attention to execution.
AdaptIT.com	The management team takes clear responsibility for decisions taken and is committed to realising them.
VERYSoft	Top management – i.e. the entrepreneur and his management team – put in a considerable amount of attention in the planning procedures.
SolveTix	The management team puts in time for taking strategic and tactical decisions. The involvement of the owners (board of directors) is restricted, keeping the big picture.
Linux	The 'management' of the Linux organisation does not show much interest for strategic planning activities.
TelEquip	There is strong commitment from both top management and business unit managers over the corporate strategy processes.
MachOne	The entrepreneur takes time for taking decisions.
CoolSystem	Both corporate and units management are involved and take considerable time and responsibility for corporate strategy formation.
InnoMobile	Management dedicates time to planning processes. But planning is not controlled centrally, but done in teamwork.
DriveSupply	Top management takes clear responsibility for the management holding level (corporate portfolio). The business level management have entrepreneurial responsibility.
GlobalCar	Top management takes full responsibility for corporate planning and dedicate significant effort to it.

Table 6-32: Cross-case analysis – management responsibility

One aspect of management responsibility relates to the level ownership over the corporate strategy processes. The second aspect relates to the degree of management attention. In this way, following types of management responsibility are constructed.
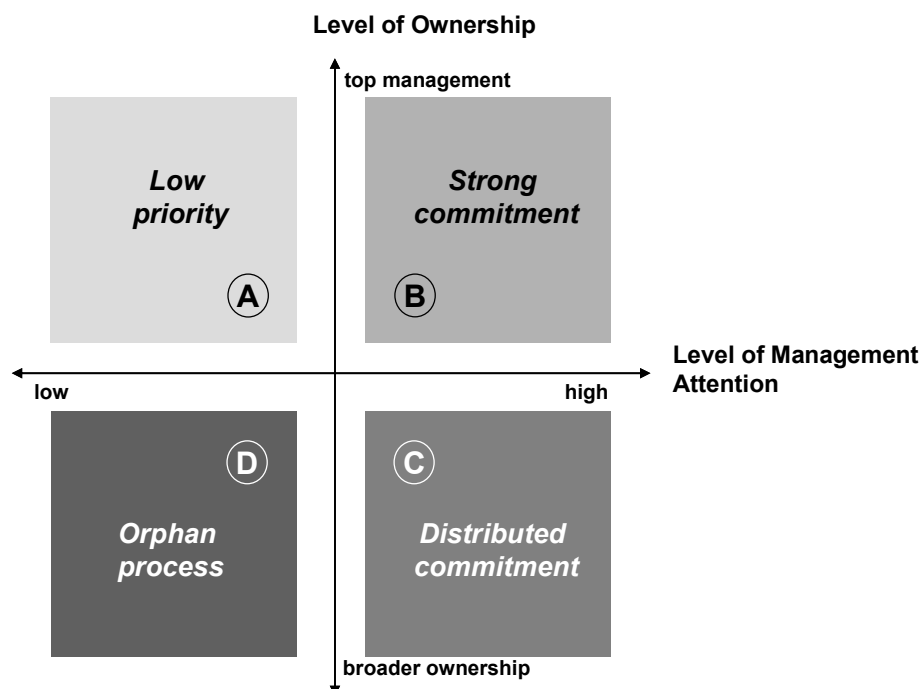
Figure 6-25: CSS Property #11 'Management responsibility'

These models can be defined as follows:

- *Low priority*: management takes responsibility for the planning process but do not dedicate significant attention to it.
- *Strong commitment*: top management takes full responsibility for the processes and dedicate a significant amount of their time to strategizing.
- *Distributed commitment*: management acknowledges the importance of planning processes and dedicate their attention to it, but the ownership over the processes is distributed.
- *Orphan process*: management does not really take ownership of the corporate strategy processes and do not spend time on it.

Exemplary for the 'low priority' model is the MachOne case, where the entrepreneur is responsible but there is low attention to planning. A good example of the 'strong commitment' is the management of DriveSupply, where all management is involved in an extensive process. InnoMobile presents an example of the 'distributed commitment' model, where the corporate level mainly focuses on setting a strategic frame. An example of the 'orphan process' model can be the CreaStudio case.

6.6.12 Planning capability

Corporate strategic planning consists of specialised activities, i.e. it is a management discipline that can be conducted with various levels of capability and skills. Like any other discipline, its conduction can be improved through years of experience. The property that relates to the skills of the enterprise in conducting corporate strategy processes is called 'planning capability' and is defined as: *the level of 'planning capability' the enterprise possesses, as determined by the (planning) experience of the people involved in strategy formation and realisation, and the level of modern planning tools usage.*

Analysis of cases: planning capability	
CreaStudio	There is no formal planning experience and no usage of planning instruments.
InnoService	The level of strategic planning expertise and skills is rather modest.
AdaptIT.com	The management team is experienced, but makes only limited use of advanced formal techniques and tools.
VERYSoft	The management team has significant levels of planning experience, as most where also part of management in the mother company, before the VERYSoft spin off.
SolveTix	The management team consists of experienced managers, but rather inexperienced in using planning instruments.
Linux	There is not much experience with strategic planning and no use of planning techniques.
TelEquip	Experienced managers are supported by professional specialists, which make use of various actual strategy tools for the various facets of planning.
MachOne	There is not much experience with using corporate planning instruments.
CoolSystem	People involved with planning are experienced and use a variety of strategic planning tools.
InnoMobile	People involved in corporate planning are experienced, also in planning tool usage.
DriveSupply	There are strong planning capabilities. There is extensive use of planning instruments and experience management and staffs.
GlobalCar	There are wide and deep planning capabilities, i.e. staff and management are experienced, also in the usage of planning tools.

Table 6-33: Cross-case analysis – planning capability

Activities can be made easier when using the right tools. One aspect that will therefore add to the capability of planning is the level of appropriate and systematic usage of planning tools. When combined with the aspect of experience level of involved people, following four types of capabilities are determined.
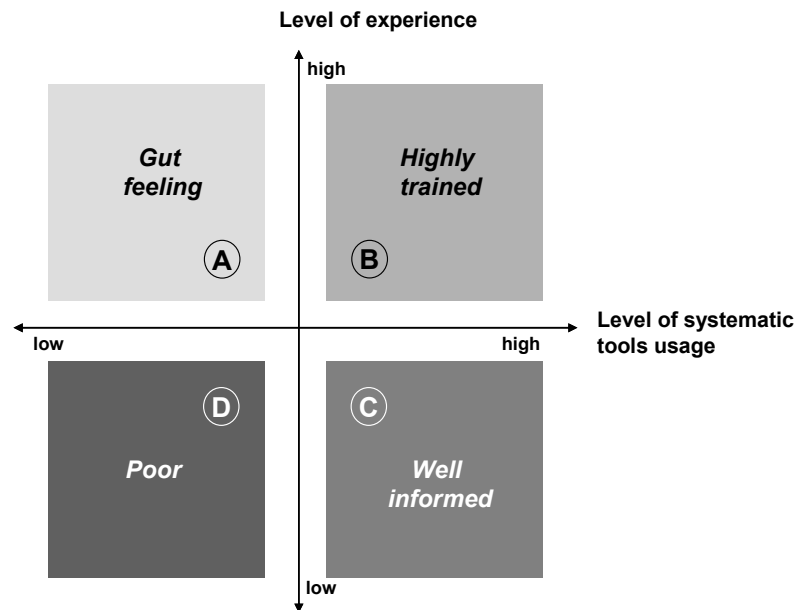
Figure 6-26: CSS Property #12 'Planning capability'

These planning capabilities are defined as follows:

- *Gut feeling*: strategies are formed and realised by experienced managers but without systematic use of latest planning tools and techniques.
- *Highly trained*: strategies are formed and realised by seasoned planners using latest management tools.
- *Well informed*: planning is done in a systematic manner using latest management thinking, however the experience of managers is low.
- *Poor*: there is a low level of planning capabilities.

SolveTix presents a good example of the 'gut feeling' capability, with an experienced management team without any systematic instrument usage. The cases of InnoMobile, DriveSupply and GlobalCar are all good examples of the 'highly trained' model. None of the cases present a direct example of the 'well informed' planning capability. However, this seems to be a real possible alternative, for example found in the referenced study of Berry [1998]. CreaStudio and MachOne are representatives of the 'poor' model, where there is no planning experience and no usage of tools.

6.6.13 Absorptive capacity

The corporate strategy system, like the knowledge-intensive enterprise, is a living system with open system boundaries. It is also an intelligent, information processing system. The cases display various degrees of CSS 'intelligence', i.e. the openness to sense external signals differs and also the speed with which the processes of acting on these signals are conducted are different. The property that relates to the capacity of the corporate strategy system to identify and deal with signals to change is called 'absorptive capacity' and is defined as: *the level of absorptive capacity the corporate strategy system possesses, as determined by the openness to external signals and the ability to act on these signals.*

Analysis of cases: absorptive capacity	
CreaStudio	CreaStudio is, in an informal manner, very open to external signals (especially from the marketplace) and does act on them.
InnoService	The enterprise is open to external signals, especially coming from clients and the market. There is significant (informal) agility to deal with these signals quickly.
AdaptIT.com	There are numerous informal activities related to scanning external signals. If required, action can be taken to deal with these signals.
VERYSoft	The CSS is open and even stimulating for change signals from inside of the organisation (in Syndag process). External signals are picked up organically from customers, the technological networks and distribution partners.
SolveTix	The informal CSS is able to take up external signals, i.e. from customers and technology suppliers.
Linux	Through the open boundaries of the community and broad spread of people, there are strong mechanisms for picking up signals for change. Due to the emergent and opportunistic character of organisation, the community is able to attend quickly to the signals.
TelEquip	Much emphasis is put on identifying external signals, e.g. from the markets and technologies. However, the enterprise is not so flexible in acting quickly on these pulses for change.
MachOne	In day to day operations, MachOne is very open for external signals, especially from research & technology and the market place.
CoolSystem	The corporate strategy system enables the picking up of external signals and dealing with them quickly.
InnoMobile	The enterprise is well equipped in picking up external signals or change and innovation. Moreover, the enterprise is able to transfer these signals into its innovation efforts.
DriveSupply	The various businesses are oriented on picking up and dealing with signals to change in a highly flexible manner.
GlobalCar	There is extensive orientation on integrating actual topics in planning. Through the large size of the corporation, quick implementation is not always possible.

Table 6-34: Cross-case analysis – absorptive capacity
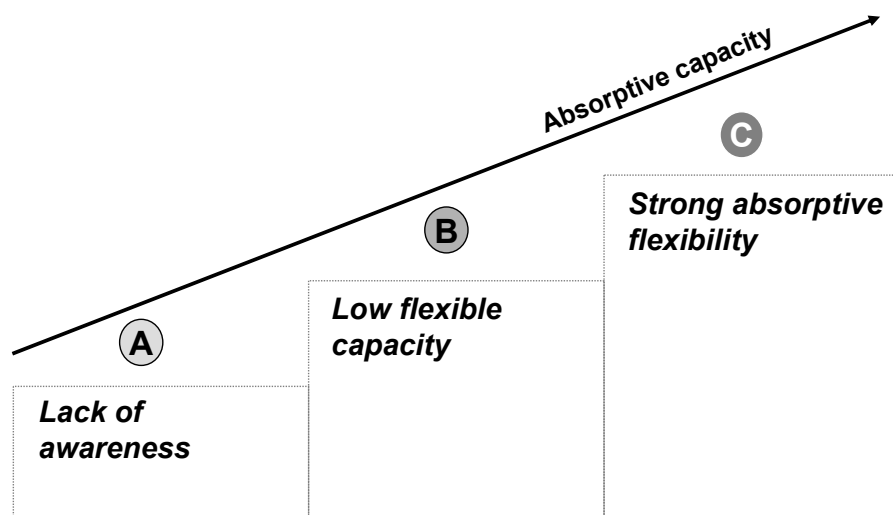
Figure 6-27: CSS Property #13 'Absorptive capacity'

All cases display absorptive capacity, but seem to differ in the level of capacity. Therefore this property is modelled as a continuum with following three levels:

- *Lack of awareness*: there is a low level of awareness and openness to external signals (from outside the CSS).

- *Low flexible capacity*: there is an ability to identify external signals, but a low ability to deal with these inputs in a flexible manner.
- *Strong absorptive flexibility*: there is an openness to identify external signals, and the CSS is able to take necessary actions to deal with these signals in a flexible manner.

The 'lack of awareness' model has not been observed in the cases, but should be a real alternative. An example of the 'low flexible capacity' is represented by TelEquip. The 'strong absorptive capacity' has been observed for example at SolveTix.

6.6.14 Change climate

A strategy as a plan is an intention, i.e. an intended strategy. This does not mean that the complete strategy also gets realised. The difference between the intended and the realised depends on a variety of factors, but the climate for change will certainly be a key factor in this regard. The property that relates to the corporate strategy system's ability to induce change processes is called 'change climate' and is defined as: *the climate (culture) for corporate change, as determined by the connection between strategy formation and realisation, and the willingness to change.*

Analysis of cases: change climate	
CreaStudio	The small company changes according to customer demand. There are no big barriers to change.
InnoService	The enterprise team is used to continuous change and there is no resistance to change. The strategy formation and realisation are basically intertwined. This makes the enterprise very adaptive.
AdaptIT.com	There is a commitment to change and close connection between strategy formation and realisation activities.
VERYSoft	The transparency of the strategy map and the inclusion of so many employees in the planning process create trust and a positive attitude towards change.
SolveTix	Through the relatively small size and strong opportunistic attitude of the management team, SolveTix is able to quickly act and implement changes.
Linux	With no real barriers to change and an adventurous spirit, the organisation is extremely adaptable to changes. It is more a fluid, natural type of change and top down induced change programmes do not exist.
TelEquip	Although attention is paid to change management, corporate change occurs in small steps mainly due to cultural reasons.
MachOne	MachOne is able to respond quickly to customer demands, however there are limits in speed due to functional barriers.
CoolSystem	The realisation of corporate strategy occurs mainly in small steps of implementation, as strategies are not detailed plans.
InnoMobile	There is a general willingness to change, especially in the area of product and technological innovation.
DriveSupply	The decentralised organisational structure and corporate strategy system are oriented to respond to regional and market related changes quickly.
GlobalCar	The company is working hard on being able to respond quicker to changes, but due to the wide variety of business activities and locations this is not easy.

Table 6-35: Cross-case analysis – change climate

The change climate has to do with the connection between strategy formation and realisation activities, which can range from weakly to strongly connected. A second aspect is the willingness of the various people involved in the corporate strategy system to realise the strategies as determined.
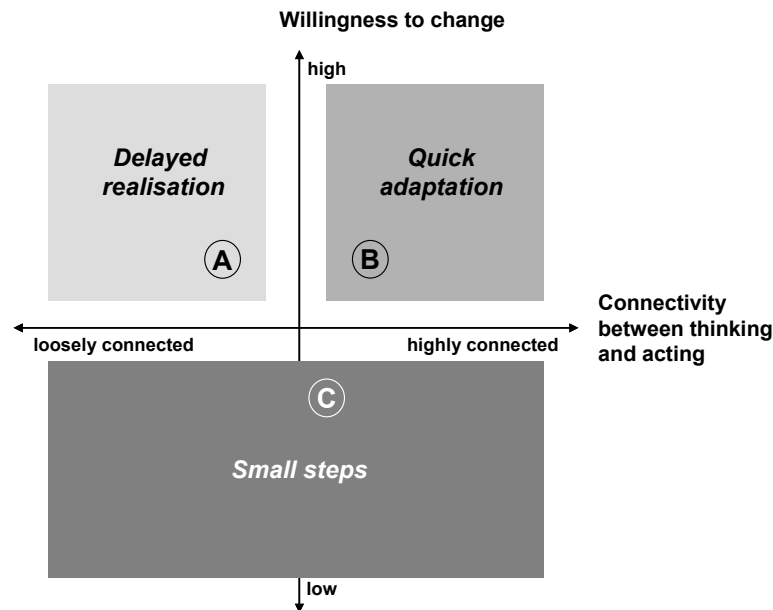
Figure 6-28: CSS Property #14 'Change climate'

As shown schematically in the figure, the following types of climate are constructed:

- *Delayed realisation*: although there is a willingness to change, as formation and realisation of strategies are not or only loosely connected, it takes time to change.
- *Quick adaptation*: changes get realised quickly as there is a general willingness to change and formation and realisation of strategy is highly interconnected (probably in parallel).
- *Small steps change*: change can occur only in smaller steps, as there is resistance to change.

An example for 'delayed realisation' was found at GlobalCar. 'Quick adaptation' is exemplified by CreaStudio and SolveTix with their informal approach to management and development. The 'small steps' model is observed at CoolSystem.

6.6.15 Summary: reflection on corporate strategy system properties

In this paragraph we have identified the following properties of the corporate strategy system: strategy format, planning rhythm, time horizon consistency, corporate strategy orientation, corporate planning formalization, organisational integration, role of corporate central planning unit, processes blueprint, decision making flow, people involvement, management responsibility, planning capability, absorptive capacity and change climate. A comprehensive tabular overview together with their definitions and descriptions can be found in appendix B.

By following the cross case analysis procedure, we have formulated an answer to the initial research subquestion asking for distinctive properties that characterise the corporate strategy system. The strategy format, planning rhythm, time horizon consistency, corporate strategy orientation and corporate planning formalization all relate to *principles* of the corporate strategy system, in a sense that they characterise the CSS regarding philosophies and notions that underlie the basic 'design' of the corporate strategy system; as reflected in the fundamental forms and shapes of the corporate strategy system. The properties organisational integration, role of central planning unit, processes blueprint and decision making flow are all related to how the CSS people, resources and activities are organised within the KIE. These properties together determine the *organisational architecture* of the corporate strategy system, including both the process model and the organisational set up.

The properties people involvement, management responsibility, planning capability, absorptive capacity and change climate mainly relate to the *resources* that are involved in the corporate strategy system as they determine the set of resources that is made available and used within the corporate strategy system, including human resources, skills and experience but also planning instruments, information and technology. In this way, we have constructed a holistic concept that describes the complete CSS system. The conceptual model that is constructed with all these properties provides a classification scheme that can clearly distinguish between various corporate strategy systems in knowledge-intensive enterprises.

To summarise the last three paragraphs, the synthesis we suggest is that any corporate strategy system of any knowledge-intensive enterprise can be characterised regarding their processes, functions and properties. With the living system lens, the corporate strategy system is itself also seen as a living system. Looking at any living system, a number of observations can be made: a system has parts; the main parts of the living system are its organs; organs fulfil certain critical functions; at any time there are different processes taking place (chemical, biological, etc.); there are relations, all parts are connected; through time, the system is evolving; the structure at any point, is the result of these processes; tools can be applied to make the function fulfilment easier.

Therefore, as in any living system, numerous processes are taking place in order to conduct the functions it fulfils. As we have argued in the previous paragraph, the core processes that the CSS conducts are corporate intelligence, strategy formation, strategy realisation and performance management. These processes can be conducted in various ways as the corporate strategy system is the set of *deliberate and non-deliberate processes* that realises corporate strategy (see CSS definition in chapter 2). Through the living system lens the functions and processes of a system should actually be regarded as two sides of the same proverbial medal: systems thinking is process thinking. In other words, content can not really be separated from process. The cases clearly show that topics that are discussed and the planning activities themselves are clearly interrelated.

Thus along these lines, we treat the CSS as one integrated system. A CSS is a system that can fulfil a number of *functions* and does so through conducting various *processes*. The main differentiation between the corporate strategy system of different knowledge-intensive enterprises lies especially in how these functions and processes are really conducted, with which emphasis and in which way. The specific form and shape of functions and processes is determined by CSS properties, which characterise how a CSS can be *organised* in a number of ways, how a CSS can be designed according to different fundamental *principles* and how different *resources* can be involved.

With the sets of corporate strategy system functions, processes and properties in combination with the context properties, we have in our hands a conceptual framework that helps us in better understanding the diversity of corporate practices and that acts as a scheme to classify these practices. From the case study descriptions (chapter 5) and the first phase of the cross case analysis (this chapter) we can already sense that there are some natural relations between the functions, processes and properties. We can now move on and start exploring these relationships more systematically and in much more detail. We will use the results of this chapter as the building blocks for the next phase of the cross case analysis, as we aim in the next chapter to construct our conceptual configurations of corporate strategy systems in knowledge-intensive enterprises with these building blocks.

7   In search of configurations: a synthesis

In this chapter we will go through the second phase of the cross case analysis, i.e. the construction of configurations. We will build especially on the building blocks, i.e. the functions, processes and properties, resulting from the first phase of the cross case analysis (see previous chapter). The first paragraph will include a brief introduction about the process that is followed for constructing configurations. The second paragraph will display the patterns of relationships between the building blocks within each of the twelve cases. Based on these case syntheses, we can then extract generalised propositions of relationship in the third paragraph. With these propositions conceptual configurations are constructed, which will be described accordingly (in paragraph 7.4-7.9).

7.1   Introduction to cross case analysis constructing configurations

As described in the chapter on the research methodology, the second phase in the development of conceptual configurations is the actual 'configuration construction'. A logical sequence of activities is followed in order to construct the configurations.

First of all, for all the twelve case studies the values are determined based on the scheme of context and system properties, as well as the CSS functions and processes (as presented in the previous chapter). As the properties have been derived from the same case studies, this is a straightforward exercise of ticking the relevant value for each of the context and system properties. The overview of relevant values for each case can be found in the appendix C in tabular form.

Secondly, the twelve case studies are analysed in a 'vertical' manner. This means that within each case the particular configuration of values is studied. The main goal of this analysis is to identify relationships between functions, processes and properties that seem to be natural or logical combinations within a particular case context. The particular pattern of relations in each case will be described in the next section on 'case syntheses'. A 'case synthesis' provides a consolidation of the main picture that emerges from the case. The case synthesis provides a helicopter-like view of each of the case studies and highlights their main storyline.

Thirdly, building on these individual case syntheses, a cross case analysis focusses on commonality of the cases in terms of relations between individual properties of the corporate strategy system and of the context. As depicted in the following figure, looking in this way at the empirical evidence uncovers connections between various functions, processes and properties. Grounded in the empirical data, through an iterative and longer period process, a significant collection of statements of relation is uncovered and collected. This set of relations is finally condensed into a concise set of propositions and sub propositions. The propositions, which are determined in the third paragraph of this chapter, are checked and validated against the empirical evidence from the case studies as well as with the literature. Also, in order to increase validity, they are cross-checked with other researchers and practitioners.
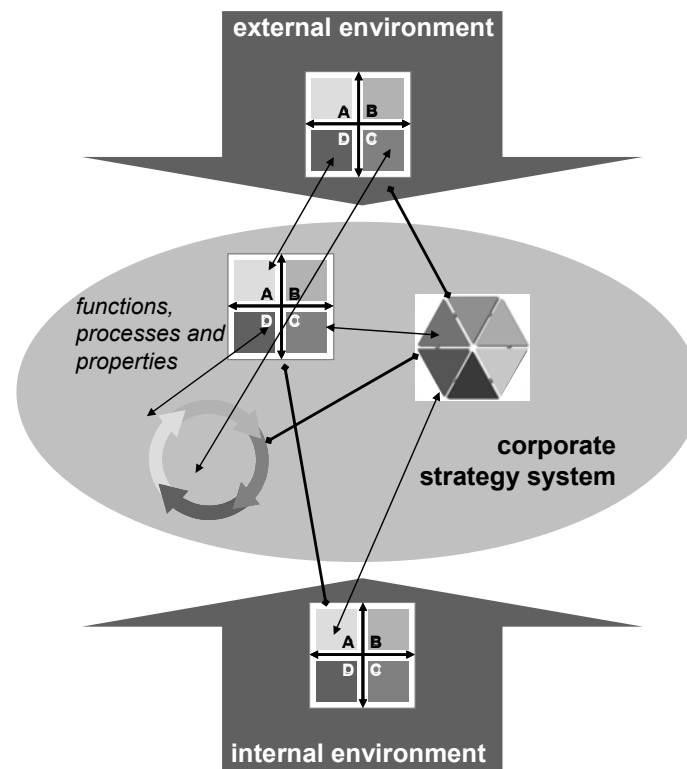
Figure 7-1: Search for relations between functions, processes and (system & context) properties

In a fourth and final step, the conceptual model of the resulting configurations is elaborated. The patterns of relationship as condensed in the propositions are the actual founding structure of the conceptual configurations. Based on the propositions, configurations can be constructed. These configurations represent distinctive types of corporate strategy systems. These configurations are archetypes, i.e. constructed models of reality. Therefore, it is important to create a logical and internally consistent model for each configuration, therefore working out the clear distinctive traits of each configuration. The resulting types are finally checked with the empirical evidence of the cases. The configurations are presented in paragraph four to nine of this chapter.

7.2   Case syntheses

This paragraph aims to provide a synthesis of each of the twelve individual case studies by creating twelve 'big pictures'. As described above, the aim of a case synthesis is to uncover the natural relations between corporate strategy system functions, processes and processes in the context of each particular case. The case syntheses are presented in the same order of appearance as in chapter five.

7.2.1   CreaStudio case synthesis

The picture that emerges is that of a small and young professional services company that is in the middle of a process of defining itself. The mission of the enterprise and a distinctive position in the market are being discussed and defined.

The external environment is changing fast. The regional market for innovation management consulting services is rather young and expanding quickly in its regional market. The enterprise challenge is to leverage upcoming opportunities in the market with rapidly developing knowledge in the management domains underlying the company's services. Due

to recent fast growth and positive economic conditions, the consultancy is going through fast organisational change processes. This growth is for example reflected in the growing number of people, projects and clients that are being served. Accordingly, the need comes up to formalise the organisational structure, enhance knowledge sharing and inter-project collaboration and enhance capabilities in professional project management.

The context of a young and rapidly advancing enterprise, which is in a process of forming itself, seems to be a natural fit with the need for the corporate strategy system to provide purpose to the company. The employees require a more transparent vision of the future and a clear strategic direction for the enterprise. The entrepreneur plays a key role in making the entrepreneurial vision explicit and in integrating all employees around this vision of the future. Communication around strategic issues and leadership are key roles of the company management.

Most of the decision making is done in the day to day reality of the client projects. Within this dynamics, corporate strategy lives as an emergent pattern of decisions. Coordination within and across projects (the main units of activity) is done informally. The natural selection of projects (through clients) gives shape to the organic process of corporate development.

7.2.2   InnoService case synthesis

The picture that emerges of InnoService is that of a professional services company that is driven by an entrepreneurial vision and spirit. The enterprise is in a process of forming itself in a rather young and new market. The context seems to be dominated by the search for a clear purpose and entrepreneurial dynamics. As a knowledge-intensive provider of services, the context is driven by being adaptive to customer needs and changing demands.

The corporate strategy system evolves primarily around the establishment of a corporate purpose. The 'corporate centre' (here: top management) has been focussed on developing and integrating the enterprise around the purpose of the company, i.e. a new position and vision of direction. Such combination of on the one hand a strategy system driven by the establishment of purpose and on the other hand the focus of the entrepreneur (and his team) on integrating the organisation into a unified whole seem a natural match.

The corporate strategy system in itself is at an early stage of development. There are no formal planning processes or organs specified. Accordingly, there is a low level of people involvement and little management attention is paid to long term strategising. The top management and area managers are focussing primarily on day to day operations, i.e. acquisition of new projects and staff development.

The context of an entrepreneurial, fast developing enterprise that is orienting itself in the markets seems to naturally fit with the informal, emergent processes of strategy formation. The driving force of the entrepreneur and the focus on motivating and leading people seem also to match such an environment.

7.2.3   AdaptIT.com case synthesis

The picture that emerges of AdaptIT.com is that of a highly responsive, fast changing enterprise. Both in the internal and external environment there are various dynamic forces for change and the organisation is oriented on dealing with these changes as they occur. The strategic focus of moving in at a certain stage and moving out when the technology and related business become to mature, demands an extremely responsive system. The enterprise seems geared for spotting new business opportunities and responding to them by

quickly advancing the skill base in the direction of those fields. This responsive nature and limitations in resources of a growing company lead to a low level of proactive innovation.

The corporate strategy system within AdaptIT.com is strongly determined by the management team and the decisions they make. There are some formal planning activities, in the shape of strategy workshops and goal agreement sessions, but a significant part of the corporate strategy system is related to informal processes.

Operational decision making, mainly as part of day to day activities, and the focus on execution and realisation of strategy go hand in hand and are exemplified by the distribution of management attention (around 10% for strategy formation). This dominant characteristic of the AdaptIT.com corporate strategy system seems to fit naturally with the entrepreneurial spirit and the relatively small size of the enterprise.

The primary function of resources building is also apparent. Being a customer focussed solutions provider, the focus on people and their skills is a natural trait (consulting business is people business). In addition, the e-business environment is highly technology intensive and changing fast. The dynamic pace of change on the markets and in the fields of technology both seem to fit with the dominance of resource building as a prime CSS function, i.e. looking for the right people, technologies and skills is a natural dominant issue.

The turbulence of the environment combined with the strong customer orientation of a systems integrator seem to make a strong orientation on picking up signals for change in the markets, even though done informally, necessary mechanisms for survival. This also correlates to the highly responsive features of the enterprise and the climate that is very encouraging to change. The prime role of the CSS in catalysing change processes therefore seem a logical consequence of the resources building function and opportunistic traits of the enterprise.

7.2.4   VERYSoft case synthesis

The picture that emerges is that of a young and ambitious software producing enterprise that is active in a relatively new field of technology development (human capital software). The fact that the enterprise is not a true start up, but a spin off from a large established company leads to a number of interesting characteristics. The management team, especially, is very experienced, the management system seems very mature and the procedures well established for a small 'start up' company. Also, the annual planning cycle, usage of sophisticated planning tools and details in planning of strategy content are a direct result of the large company culture inheritance.

Within the frame of a strong corporate direction, the enterprise is aiming for growth through innovation with new functionality. The innovation process is therefore triggered both technology push through research and technology development forces and market pull through market demand and competitive forces. The corporate strategy system supports this dynamic resources building process. The use of networks in research and in customer value delivery (distributors) seems to add to the adaptiveness of the enterprise in building new competencies and solutions.

The strong influence of the entrepreneur and his management team decision making seems to fit with the size and formation stage of the enterprise development. The strong focus on including all employees in the growth of the enterprise, also during the corporate strategy processes, seems to naturally fit with the company focus on growth and quick adaptation.

7.2.5   SolveTix case synthesis

The picture that emerges is that of a small, ambitious and fast growing technology company where the corporate strategy exists as a strong common sense of direction. Strategy lives and emerges as a pattern of day to day decisions. The decision making is done by the small management team. The strong role of the CEO and his management team seems to naturally fit with the small size and dynamic qualities of the enterprise.

The corporate strategy system consists mainly of the day to day decision making of the management team. The key challenge therefore is to align this opportunistic driven decision making with the long term strategic direction. The integration of people behind the common longer term vision of direction is a key aspect of the corporate strategy system in SolveTix.

SolveTix has a complicated network of stakeholders. Through a number of strategic partnerships with e.g. technology suppliers, the management team can focus on identifying customer needs and exploiting these upcoming opportunities quickly with new solutions. The opportunistic mindset focused on delivering customer value seems to naturally fit with the strong entrepreneurial spirit and a management team that focuses on motivating and integrating all employees around a strategic vision.

7.2.6   Linux case synthesis

The picture that emerges is that of Linux being a virtual network of thousands of dispersed individuals collaborating through the internet. Although there is neither a formal organisational structure with corporate centre, nor a formal corporate planning process, there are a number of institutions and mechanisms that fulfil these functions in an emergent and to a large extent self organising manner.

The external context of Linux is that of a volatile business environment of the computing and software industry with a small number of intensively competitive forces. The loose network with its characteristics of no corporate centre control and low level of collaboration between the different units of activity (projects) seems to thrive very well in such an environment. The flat collaborative network connects individual volunteers (testers and developers), users, commercial enterprises, groups (lobby, user) and other stakeholders (politics). The extreme bottom up mode of decision making and the self organising processes seem a natural fit in this context.

The corporate strategy system in this case consists of the (virtual) management hierarchy and decision making structure. The main decisions that are made by the organisation 'top management' (i.e. the community leader and his lieutenants) focus strongly on technical, product performance related issues. Through the transparency of the decision making mechanisms and the symbological role of the organisation leadership, the prime role of the corporate strategy system lies in providing a platform for communication among the units of activity.

The coping interactively function in this case is fulfilled in a rather informal and emergent manner but seems to naturally correlate with the flat, collaborative network structure. It also seems a well adapted function within a strongly volatile environment. Within the Linux context   there is a spontaneous development process based on quick sensing, transparency and highly opportunistic, quick adaptation making use of the open boundaries (easy in- and outflow of fresh insights, capabilities) and the scientific method (openness, publish often, feedback, peer to peer control, focus on the quality). Especially, through commercial and user oriented partners, the network is also developing into related areas (software

applications and other hardware areas). Such an opportunistic and emergent pattern of corporate development seems to belong to the coping interactively function of the corporate strategy system and fits well in a decentralised, bottom up network environment.

7.2.7   TelEquip case synthesis

The picture that emerges is that of TelEquip being a large and advanced high technology enterprise, which is experiencing a radical shift in dominant technologies and a period of high turbulencies on the markets. Due to its size and the characteristics of its various businesses, parts of the enterprise are growing quick, others are maturing and in decline.

The corporate strategy system is also changing, but mature and systematic. Moreover, the system is formalised, extensive and involves many people from various groups inside the enterprise, e.g. a planning department, a planning committee and managers on corporate level and from the business units. The context is highly 'planning-intensive'.

The core function the corporate strategy system fulfils is to broker the dynamic positioning process in these turbulent contexts. Moreover, there seems to be a clear and natural connection between such focus on competitive positioning and the political, collaborative way of taking decisions. The businesses and the markets they are active on are changing rapidly and are pulling the enterprise into various directions. This leads to a continuous struggle and need for political processes of finding compromises, e.g. in setting priorities and committing resources.

The fact that innovation and the related competitive product / market dynamics are so high on the corporate strategy agenda seems to be born from necessity. The dynamic positioning in turbulent markets (and shifts in technology fields) demand a strong emphasis on identifying and realising (new) business opportunities for customers based on existing and new technologies. It is therefore natural that it lies in the core of attention in the dialogue of the corporate centre with the various business units. Because of the entrepreneurial responsibility of the businesses, the corporate centre and planning department can and do only play a brokering role in this process. Therefore, both individual business units and the corporate centre have important responsibilities and strong commitments towards taking strategic decisions.

7.2.8   MachOne case synthesis

The picture that emerges is that of a small and growing technology-intensive enterprise in a dynamic but maturing environment. The organisation is oriented on developing and delivering unique customer solutions, in the form of advanced machines. One of the core strengths of the enterprise lies in responding quickly to customer demand. All main decisions are taken within the context of such customer dynamics.

Considerable attention is being paid to technological development, such as reflected in the high number of engineers, the partnerships with universities and research institutions and the overall R&D effort. This seems a reflection of the dynamics of the context (e.g. fast technology development) and the nature of the business and products.

The entrepreneur and his management team are focussed on establishing a clear and transparent vision and overall strategy for the enterprise and are trying to integrate the various employees and departments around such a strategic vision. The strong dominance of the entrepreneur and informal decision making processes seem to be a natural fit in this case. The centralised dominance of the leadership and the hierarchical, functional

organisational structure seem to relate to the single business, small enterprise context. Moreover, the lack of formal strategic planning processes and corporate strategy function seem a natural fit within the dynamic, entrepreneurial driven reality of a small enterprise.

7.2.9   CoolSystem case synthesis

The picture that emerges is that of a mature, first tier supplier active in the global automotive intricate value web. As a systems integrator, this KIE demonstrates clear capabilities in collaborating in a network with customers, suppliers and other partners. By pursuing a strategy of technology leadership the orientation is not only on delivering customer value, but also on driving technological innovation in a web of partners. The internal context is characterised by the cooperative of units, i.e. a variety of units of activity intensively cooperating on the value chain.

The primary function of the corporate strategy system lies in coordinating the units of activity, which seems a natural fit in the cooperative of units, collaborative organisational structure. Being a matrix of product divisions, customer centres and regional companies active in a related field of business (automotive technological subsystems), the KIE units need to collaborate in order to deliver value. The corporate strategy system plays a natural role in aligning the development of the units and facilitating the cooperative dialogue.

The corporate centre has a small formalised team that facilitates the corporate planning process. The facilitating role of the central team seems a natural fit with the primary CSS function of coordinating the units of activity. Also the distributed commitment, i.e. involving top and unit management, for the strategic planning process fits in this case with the CSS primary function (coordinating UOA) and the facilitating role of the CCP unit.

7.2.10 InnoMobile case synthesis

The picture that emerges is that of a mature and long lived manufacturer (OEM) of automobiles. It has a number of well known global brands and is following a strategy of producing for the high end of the market. It spends high amounts of effort and time on research & development and is considered an innovation and technology leader in the industry. The technology-intensive enterprise aims for diversification through organic growth and collaborative innovation.

Internal and external collaboration are of high importance. Not only are there strongly cooperating internal units of activity (product-based business units and divisions), but also external collaboration is important within the supply chain and for innovation (R&D partnerships). There seems a natural fit in this case between the importance of collaboration and the primary function of the corporate strategy system of coordinating the units of activity. Within the corporate strategy system, the focus is on determining a long term strategic direction for the enterprise and aligning the units of activity around this direction, e.g. through goal agreement discussions.

The corporate centre plays a key role in the internal coordination (as well as partly for strategic external partnerships). There is a small corporate planning staff that supports the board of management in conducting the annual planning cycle. The primary role of this planning unit is to support the planning process and facilitate the alignment of the units of activity. The combination of a facilitating central planning unit is a natural fit with the primary function of the corporate strategy system to coordinate the units of activity.

The strategy process is really designed as a strategic dialogue between top management and management of the divisions and business units. The distributed commitment of long term planning is a key characteristic of the InnoMobile corporate strategy system. It seems to be driven by the need for achieving synergy between the various units and the drive to achieve collaborative innovation.

7.2.11 DriveSupply case synthesis

The picture that emerges is that of a technology-intensive supplier to the automotive industry that has an extensive portfolio of activities. The enterprise is large and mature and has a truly global coverage and presence. The decentralised organisational structure is aimed at delivering customer value within the business units. Whereas the entrepreneurial responsibility lies mainly in the hands of the units' management, the central board of management (i.e. the corporate centre) acts as a management holding. In this case this seems a natural and logical fit with the diversity of interests that is pursued. As the business issues are divergent, they are best addressed on the unit level.

The corporate centre takes a strong role in composing a balanced selection of business activities. Through setting an overall strategic frame and composing the corporate portfolio, the top management steers the development of the entire corporation. The establishment of a corporate portfolio is the key function of the corporate strategy system. The combination of composition of businesses as a key CSS function with a corporate centre acting as a management holding of the group's broad variety of business interests seems a natural fit. The role of the central corporate planning unit is to support the board of management in conducting the strategic planning processes and thus plays an important role in directing the overall development direction of the various businesses.

The development of business plans is not directly part of the corporate strategic planning cycle, but is highly influenced through the overall strategic frame and targets that are set as part of the corporate planning process. In this way, the corporate strategy system does not go into all the details of the business strategies, but moreover sets targets in order to measure the performance of the businesses against these targets. The corporate strategy system thus plays a directing role in the development of the individual units. The focus on setting corporate objectives, targets and measuring the performance seems a natural fit with the focus of the corporate strategy system on establishing a balanced portfolio. The corporate centre takes on the role of a central investor composing the portfolio of interests that are pursued.

7.2.12 GlobalCar case synthesis

The picture that emerges is that of a large technology-intensive enterprise that is following a holistic approach to the automotive business. It covers a wide diversity of markets segments and is truly global in its presence. The external environment is significantly volatile as caused by intense competition, maturity forces of some key markets and a deeply connected supply chain. The enterprise is not really 'diversified' in the common sense of the word (active in unrelated businesses), but is active in a wide diversity of businesses. Through pursuing this wide diversity of interests in the automotive industry the enterprise aims to be less receptive to the volatile shocks of the global value chains.

The primary function of the corporate strategy system is to compose a balanced selection of all these wide ranging interests and activities. This emphasis on business portfolio

composition seems a natural fit in this case with such a wide range of business segments. The pursuit and optimisation of the portfolio is done regarding shareholder value and the corporate strategy system also includes strong risk monitoring and other controlling instruments for directing the various units of activity.

The corporate centre takes full responsibility of corporate strategic planning processes and seems a directive force within a centralised organisational structure. The combination of a primary CSS function of composing a balanced portfolio of businesses and a strong top management are a natural fit with the existence of a strong central planning unit. The corporate strategy team is directly integrated in the corporate development department and is linked to the central board of management. The role of the central planning unit of 'directing' the units of activity seems necessary in this case in order to keep a control on the variety of businesses, keep risks acceptable and optimise the portfolio of various interests.

7.3   Propositions about relationships

In the syntheses of each case study, we can already see initial patterns of relationship emerge. In this paragraph, the various statements of relation that are similar across the case studies will be clustered and turned into coherent propositions. In the following sections these propositions and their sub propositions are determined. These propositions are presented in combination with the main pieces of empirical evidence supporting them.

7.3.1   Proposition one: typical contexts of knowledge-intensive enterprises

Context is an important notion in the configuration school of strategy research. One of the main principles implies that the nature of an effective corporate strategy system will depend on the context it is in, i.e. different systems for different contexts. The search for configurations, in this sense, is a search for typical contexts. The idea is that with a small number of typical contexts the whole population of knowledge-intensive enterprise contexts can be 'covered'. In the previous chapter, eleven distinctive context properties have been identified with their according values. Out of all the possible combinations of these values, the first proposition claims that there are only a small number of typical corporate strategy system contexts. This proposition implies that the context of a corporate strategy system in a knowledge-intensive enterprise will resemble one of these typical contexts.

The first two contexts are especially determined by the maturity of the enterprise (internal property 'corporate maturity'), whereby context one relates to a KIE in its earlier phase and context two to a KIE in a (high) growth trajectory. Context three to five relate to more mature enterprises. Context three relates to KIE where the environment is dominated by severe competitive forces (external property 'competitive complexity'). For the contexts four, five and (to some extent) six, the properties related to the organisational architecture (internal properties 'units of activity diversity' and 'collaborative structure') are the determining ones. Context four relates to a diversified, multibusiness context. Context five relates to a KIE with close connected units of activity (for example in related businesses) where collaboration and innovation are defining features. The sixth typical context relates to more loosely coupled network structures. Also the environmental change pattern plays a key role in context six. In the following description, additional traits of the context are described. It is important to note that in this way, the typical contexts are believed to cut across various other issues, such as among others the industry or sector the KIE is in, the particular type of business and size of the KIE.

Proposition 1: *There are six typical CSS contexts and the context of any corporate strategy system in any knowledge-intensive enterprise will resemble one of these typical contexts.*	
P 1.a	Context one - KIE in an early stage of its corporate lifecycle; young, small or entrepreneurial enterprise with CSS as informal strategising, day to day decisions.
P 1.b	Context two – fast growing, advancing KIE with CSS as a catalyst for change.
P 1.c	Context three – KIE dealing with strong competitive forces and strong units of activity with CSS as political compromise finding (between these units).
P 1.d	Context four – diversified, multibusiness KIE with CSS as central control centre.
P 1.e	Context five – KIE with strongly collaborating and synergetic units of activity with CSS as facilitator of a strategic dialogue with units.
P 1.f	Context six – loose networked KIE with CSS as self organising platform.

Table 7-1: Proposition one – six types of context

The sub propositions, as displayed in the table, are described below.

Typical context one: entrepreneurial KIE being formed (CSS as informal strategising)

The first typical context is one where the corporate strategy system does not have a very formalised, systematic shape. The first context is one where there are not many routines and not much experience with corporate strategy processes.

This kind of context is typical for an enterprise that is either very small or young, i.e. an enterprise in its *'formation'* stage of the lifecycle; an enterprise in its infancy, being formed and shaped; a pioneer that is establishing its business and defining its core. Examples could be entrepreneurial firms, startups, small or young SMEs (small and medium sized enterprises), small R&D firms and other innovators. The situation of InnoService resembles this typical context as it is in a process of forming itself in a rather young and new market. The context is dominated by entrepreneurial dynamics. The corporate strategy system in itself is also at an early stage of development.

In this context, there are no formal planning processes or organs specified. A similar situation was encountered at the SolveTix case. Due to the relatively small size of the company, the limited resources and typically low levels of experience, there is not much need for extensive formal corporate strategy systems. Berry [1998] in a study among small high-tech enterprises has come to similar conclusions by finding that during early stages of a company lifecycle strategic planning does not have to be highly formalised and that the technical entrepreneur's strategic awareness will determine the planning.

The strong role of the entrepreneur in taking decisions was observed also in the example of InnoService, as well as in the CreaStudio and MachOne case. As observed there, most of this decision making is done during day to day operations.

Typical context two: fast growing, advancing enterprise (CSS as a catalyst for change)

The second typical context is one where the knowledge-intensive enterprise is in a process of rapid advancement and growth, where the corporate strategy system is a catalyst driving these changes. Compared to the first context, the corporate strategy system is getting some shape and form, as typically the size of the enterprise is bigger and corporate strategy processes are required in order to identify and select opportunities for growth. However, many of the corporate strategy processes still might have an informal character. This context is typical for high growth firms, advanced SMEs, adaptive firms in dynamic environments.

The AdaptIT.com situation resembles this context, being an enterprise that is geared for spotting new business opportunities and responding to them by quickly advancing the skill base in the direction of those fields. Typical for this context is the *dynamics of the environment*, changes caused by external environment factors occur very frequently. This environmental change pattern is observed in the AdaptIT.com case where the environment combined with the strong customer orientation of a systems integrator make a strong orientation on picking up signals for change in the markets necessary mechanisms for survival.

As also seen in the VERYSoft case, 'speed' – as the *"capability to respond quickly to customer or market demands and to incorporate new ideas and technologies quickly into new products"* [Stalk et al., 1992] – is a core driver for creating value in this type of context. Some other key words are *'advancement'*, i.e. the enterprise is advancing its resources and activity system; *'growth in nearby businesses'*, i.e. growth is typically organic and aimed for in nearby businesses (in terms of product or market similarity); and *'adaptive'*, i.e. strength in both reacting and being proactive.

Typical context three: KIE dealing with competitive forces (CSS as compromise finding).

The third typical context is one where the corporate strategy sytem is determined by processes of compromise finding between units of activity and the corporate centre. In a context of very strong competition, of *'hyper competition'*, the knowledge-intensive enterprise is confronted with heterogeneous and highly competitive forces. Such competitive forces are most strongly felt when the enterprise itself is larger (a smaller enterprise would have less to loose), but has no dominant market position yet. Typical is the *'distinguished participant'*, where customers recognise the distinctive traits of the enterprise, but the enterprise has a rather weak position in the value chain. The combination of strong competition and the enterprise not being dominant, leads to a situation where the enterprise needs to put all its efforts into trying to keep up or move ahead. The corporate strategy system is naturally geared towards competition and continuously aiming to establish itself within such high competitive dynamics.

The TelEquip situation resembles this context, where innovation and the related competitive product / market dynamics are so high on the corporate strategy agenda because of necessity. The dynamic positioning in turbulent markets (and shifts in technology fields) demand a strong emphasis on identifying and realising (new) business opportunities for customers based on existing and new technologies.

As observed in the TelEquip case, the larger enterprise in this context has typically a number of businesses it is in, or has a number of larger units of activity. With competitive forces in the markets pulling the businesses into various directions, naturally leads to an internal corporate situation where compromises (between the businesses) need to be made and politics gains in influence. This context is planning intensive and as stakes are so high, much value is placed on establishing mature and systematic corporate strategy procedures.

Typical context four: diversified, multibusiness KIE (CSS as central control centre)

The fourth context is one where the corporate strategy system is determined by a strong (and relatively big) corporate centre that rigidly controls and steers the direction of development of the various businesses (units of activity).

This is the context typically found in *diversified enterprises*, i.e. enterprises operating in different areas of business, some of them unrelated. Other examples of this context could be found in multibusiness, multi-competencies firms, multicore conglomerates and unrelated diversified corporations.

A mature industry, but also high volatility sectors are two of more possible drivers for an enterprise to spread its entrepreneurial risk by being active in various fields of business. It requires a large and well established enterprise to look for proactively pursuing growth into distant businesses (e.g. through mergers); with possibility of shifting the core businesses. This context demands *the "capability to adapt simultaneously to many different business environments"*. [Stalk et al., 1992]

As seen in the GlobalCar and DriveSupply case, there is a natural connection between a diversified multibusiness enterprise and a strong role of the corporate strategy system to act as a central control centre, typically financially driven towards operational value creation and optimising the overall portfolio of activities. Apart from the fact that it is natural as a diversifying enterprise (required for valuation of takeovers) to think in terms of investment and risks versus payback, the enterprise is typically also too big and diverse to be able to go into all the operational details of the business units. Therefore, the corporate centre focuses on financial, quantitative returns aiming to control and optimise the portfolio of investments.

Typical context five: KIE with collaborating and synergetic units (CSS as facilitator)

The fifth typical context is one where the corporate strategy processes have more the character of a strategic dialogue between the corporate centre centre and the units of activity. Although, a systematic and mature strategy system might be in place, the role of a central corporate planning department typically focuses on facilitating the collaboration between the various units and is aiming to create synergy among them. Synergy is therefore not only pursued in terms of financial value creation (as was a focal point of context four), but more in terms of working together, expanding core competencies and looking for innovation collaboratively.

This context can be found in mature, multi-business, multi-units firms; with strong, established but related units (on business level). It can be that the enterprise is involved in related businesses, but with a single or related core(s). Either driven by the pressures of a maturing or rapidly changing environment (can even be a phase of radical chage, renewal), the knowledge-intensive enterprise is focused on defending and extending the core business, but also proactively looking for more radical innovation. As seen in the InnoMobile and CoolSystem cases, in this context collaboration among the units is crucial (in order to create synergies and collaborative innovation); but also innovation is pursued in external alliances and networks, as in this context the enterprise is aware of its own core competencies and looks for additional competencies for radical innovation, i.e. either as a *'technology disruptor'* where the enterprise is radically changing its technologically resources base; or as a *'paradigm breaker'* where the knowledge-intensive enterprise is radically innovating its knowledge base.

In this context, the knowledge-intensive enterprise is driven by the *"capability to generate new ideas and to combine existing elements to create new sources of value."* [Stalk et al., 1992] In line with these findings, the American Productivity & Quality Centre [APQC, 1997] examined the strategic planning techniques of 16 leading-edge companies, mainly high-tech companies in dynamic environments and found a strong link *between dynamic (technology) contexts and long term, innovation focus.* This best practice study showed that firms tend to

move away from efficiency-oriented change strategies to future-oriented innovation strategies. Another study from Vicere [1997] reflects the changing view towards ongoing change management through the creation and stewardship of more flexible, networked organizational cultures.

The *'cooperative of units'* collaborative structure, where units of activity are strongly connected in guiding their activities, are a baseline for pursuing cross-business innovation. This context is very encouraging for *innovation*, i.e. enterprises that are strong in anticipating change and acting proactively.

The corporate strategy system is well established and mature, but geared towards pursuing longer term matters and (radical) innovation, through facilitating the strategic dialogue and collaborations among the various units of activity and their related businesses.

Typical context six: loose networked KIE (CSS as self organising platform)

The sixth typical context is one where the corporate strategy processes are opportunistic and shaped rather emergently. The strategy processes are characterised by making small, but fast, steps. This is the context of the *'loose network'* collaborative structure, where there is a low level of collaboration between the different units of activity and a lack of corporate centre control (or none at all). Examples can be found in flat or virtual networks with many different units of activity; networks that consist of strong and independent units (agents); in complex environments, complicated webs of activity.

A flat network of innovation with highly responsive agents; where paradigms of survival of the fittest make sense. As seen in the Linux case, this kind of context is a well adapted form for highly 'turbulent environments' (environmental change pattern), i.e. environments with often occurring, high impact changes. The external context of Linux is observed to be that of a volatile business environment of the computing and software industry with a small number of intensively competitive forces. The loose network with its characteristics of no corporate centre control and low level of collaboration between the different units of activity (projects) seems to thrive very well in such an environment.

As the Linux case shows, this context is receptive for an 'opportunistic' (adaptive strength) style of innovation, which is perhaps not very proactive, but is geared towards reacting quickly to external signals to change and is therefore pursuing – maybe even unintentionally or by coincidence - growth in nearby or distant business.

As the context of the flat, complicated network is a structure for adapting naturally to environmental changes, the role of the corporate strategy system and corporate centre should be seen more in terms of providing a platform for communication, for encouraging cross-border 'pollination' and establishing a positive infrastructure and culture for innovation.

7.3.2   Proposition two: dominant CSS function and typical context

The corporate strategy system in the living systems view is the corporate subsystem that has the primacy over the function of governing the corporate development processes of the KIE. Based on the cross case analysis as described in the previous chapter, the corporate strategy system governs corporate development mechanisms, i.e. a CSS has primacy in the corporate context of esential functions: *Providing purpose*; *Building resources*; *Positioning competitively*; *Composing businesses*; *Coordinating units of activity*; and *Coping interactively*. As was observed in the various cases, these functions can be fulfilled in different ways in different cases. The functions were also supported by various views of

thought in the strategy literature. But whereas the literature considers mainly one function to be dominant in an enterprise, the analysis in this research leads to proposing that in every knowledge-intensive enterprise at least a number of these functions are fulfilled, but that in every typical context one of these will be clearly dominant and most appropriately fitting with the context properties. In this way, this second proposition and its subpropositions claim a clear relationship between the typical contexts (see proposition one) and the primary functions of corporate strategy systems.

Proposition 2: *In every KIE, the CSS fulfils a number of CSS functions, but in every typical context one CSS function is clearly dominant.*	
P 2.a	The *'Providing purpose'* function is naturally dominant in the context of an entrepreneurial KIE being formed with CSS as informal strategising (context one).
P 2.b	The *'Building resources'* function is naturally dominant in the context of a fast growing, advancing KIE with CSS as catalyst for change (context two).
P 2.c	The *'Positioning competitively'* function is naturally dominant in the context of a KIE dealing with competitive forces with CSS as compromise finding (context three).
P 2.d	The *'Composing businesses'* function is naturally dominant in the context of a diversified, multibusiness KIE with CSS as central control centre (context four).
P 2.e	The *'Coordinating UOAs'* function is naturally dominant in the context of a KIE with collaborating and synergetic units with CSS as facilitator (context five).
P 2.f	The *'Coping interactively'* function is naturally dominant in the context of a loose networked KIE with CSS as self organising platform (context six).

Table 7-2: Proposition two – dominant CSS function and context

The sub propositions, as displayed in the table, are described below.

Proposition 2.a: The 'Providing purpose' function is naturally dominant in context one

(entrepreneurial KIE being formed with CSS as informal strategising).

The providing purpose function of CSS is about providing the enterprise with a meaning and a global sense of direction. A young, small or entrepreneurial enterprise is naturally focussed on orienting itself in the overall market and further environment. Therefore, for the context of a KIE in an early stage of its corporate lifecycle to provide purpose is a logical primary function. The relation between the providing purpose function and context one has been identified strongly in the CreaStudio, InnoService and MachOne cases. In the case of MachOne, the entrepreneur and his management team are focussed on establishing a clear and transparent vision and overall strategy for the enterprise and are trying to integrate the various employees and departments around such strategic vision. Also for SolveTix, the integration of people behind the common longer tem vision of direction is the key aspect of the corporate strategy system. In the InnoService case, the context of the entrepreneurial, fast developing enterprise that is orienting itself in the markets has also been found in combination with a corporate strategy system evolving primarily around the establishment of a corporate purpose.

Proposition 2.b: The 'Building resources' function is naturally dominant in context two

(fast growing, advancing KIE with CSS as catalyst for change).

The building resources function of a CSS is the function of selecting, developing and leveraging strategic resources. This function was observed both in the AdaptIT.com and

VERYSoft cases in strong relationship with the context of a fast growing, advancing KIE. In the case of VERYSoft, the strong focus on including all employees in the growth of the enterprise, also during the corporate strategy processes seemed to naturally fit with the company focus on growth and quick adaptation. By this focus on building resources, the CSS truly becomes a catalyst for change.

The same relation has been observed in the AdaptIT.com case, where the dynamic pace of change on the markets and in the fields of technology both seem to fit with the dominance of resource building as a prime CSS function, i.e. looking for the right people, technologies and skills is observed there as a naturally dominant issue.

Proposition 2.c: The 'Positioning competitively' function is naturally dominant in context

three (KIE dealing with competitive forces, CSS as compromise finding).

In the context three the strong competitive forces are a key attribute. The importance of the positioning competitively is a natural primary function as it is the CSS function that deals with the determination of a sustainable competitive position of the KIE in its environment. This link between the dominance of the positioning competitively function and a fiercely competitive environment has been observed in the TelEquip case, where the core function of the corporate strategy system is to broker the dynamic positioning process in its extremely turbulent context.

Another key feature of context three are strong units of activity with CSS as political compromise finding (between these units). Strong units of activity, e.g. business units, seem to make sense in turbulent environments. For example in the TelEquip case the fact that the businesses and the markets they are active on are changing rapidly make that they are pulling the enterprise into various directions. In that case, it leads to a continuous struggle and need for political processes of finding compromises, e.g. in setting priorities and committing resources. In this way, there is a clear and natural connection between the political, collaborative way of taking decisions (context three) and the primary function of competitive positioning.

Proposition 2.d: The 'Composing businesses' function is naturally dominant in context four

(diversified, multibusiness KIE with CSS as central control centre).

The fourth typical context is the context of the diversified, multibusiness KIE. It is the context, which compared to all the other contexts probably has the biggest amount of units of activity and certainly has the broadest diversity of business interests. This naturally poses a high demand on being able to compose a balanced selection of those businesses (or areas of economic activity). This makes the function of composing businesses (units of activity) the primary function of the CSS in the fourth context. This primacy of the composing businesses CSS function has been observed in the diversified, multibusinesses contexts of both the GlobalCar and DriveSupply cases. Also the CSS in the role of a central control centre has been observed there in combination with the importance of the composing businesses function.

Proposition 2.e: The 'Coordinating UOAs' function is naturally dominant in five

(KIE with collaborating and synergetic units, with CSS as facilitator).

The typical context five is the context of a KIE with strongly collaborating and synergetic units of activity. In such a context where synergy between units of activity is a key aim, the importance of coordinating these units and facilitating their collaborative development seems natural. In both the InnoMobile and CoolSystem case the CSS function of coordinating the units of activity has been observed in combination with collaborating and synergetic units. Instead of controlling the units (like in context four) or keeping competing units together (like in context three), the focus of the CSS in this context is very constructive and is all about being a facilitator of a strategic dialogue with the various units.

Proposition 2.f: The 'Coping interactively' function is naturally dominant in context six

(loose networked KIE with CSS as self organising platform).

The sixth typical context is one of a loose networked KIE, which is self organising and has a CSS dealing with making small steps. In the Linux case, a strong connection has been observed between this kind of context and the coping interactively function of its CSS. In the Linux case, the coping interactively function is fulfilled in a rather informal and emergent manner and correlates with its flat, collaborative network structure.

As the coping interactively function deals with optimising the corporate evolutionary process by preparing for and dealing with unanticipated events, this function is crucial for a self organising and fast evolution context. Also in the Linux case the decentralised, bottom up network environment is linked to such an opportunistic and emergent pattern of corporate development that the coping interactively function of the corporate strategy system was observed to fit this context very well.

7.3.3   Proposition three: Corporate central planning unit role and CSS function

About the role of the corporate centre, a lot has been written in corporate strategy literature [e.g. Campbell, Goold & Alexander, 1995]. This includes studies on the form and shape of the corporate centre and for example the role of a central planning department or team. Although top management may always be expected to have final responsibility of taking decisions and governing their implementation, a central unit in whatever form or shape can take over a lot of the actual 'hands on' work in the corporate strategy processes, such as e.g. information gathering, analysis, discussion preparation, moderation of workshops, working out of reports, communication towards the rest of the enterprise, project management of strategic change initiatives, etc. etc.

Moreover, as observed in the cases and defined in one of the CSS properties (CCP unit role), this central planning unit can take various forms and shapes. One possibility is that the management team conducts all the processes work themselves. Also, cases with temporary or rotating planning committees have been observed. However, in many of the bigger companies from the case studies, the corporate centre is supported by a fixed planning team or department, whose sole job is to conduct and support the 'day to day' corporate strategy processes work. These teams or departments again can vary in size, orientation and influence, among others.

The CSS property 'CCP unit role' then defines a number of clearly distinctive main roles that the central planning unit can fulfil in a KIE. This third proposition is about the relationship

between this property and the corporate strategy system functions. This proposition claims that although there are various shapes that a central planning unit (i.e. depending on the case, being the management team, one person, a committee, a staff team or a full blown department) can take in a knowledge-intensive enterprise, the dominant role of the *corporate centre planning unit* will be found naturally in relation to the dominant CSS function. When following the logic of the living systems view this seems to make sense. The role of one key element (the central planning unit) within the system (the CSS) needs to be aligned with the overall function that this system is fulfilling in its context (the KIE). Following sub propositions are defined linking the roles of a central planning unit with the functions of the overall corporate strategy system.

Proposition 3: *Each of the dominant CSS functions will be found in relation to a preferred dominant role of the CCP unit.*	
P 3.a	'Integration' is natural (best fit), when the 'Providing purpose' function is dominant.
P 3.b	'Catalysation' is natural, when the 'Building resources' function is dominant.
P 3.c	'Brokering' is natural, when the 'Positioning competitively' function is dominant.
P 3.d	'Directing' is natural, when the 'Composing businesses' function is dominant.
P 3.e	'Facilitation' is natural, when the 'Coordinating UOAs' function is dominant.
P 3.f	'Communication' is natural, when the 'Coping interactively' function is dominant.

Table 7-3: Proposition three – dominant CCP unit role and CSS function

These sub propositions are described below.

Proposition 3.a: The CCP unit role of 'Integration' is natural (best fit),

when the 'Providing purpose' function is dominant.

The integration role of the central planning unit lies in leading people and integrating the organisation into a unified whole. This role is in various cases observed to be crucial in enterprises that are orienting themselves in the marketplace and determining their purpose in the overall ecosystem of corporate stakeholders. As observed in the MachOne, InnoService, CreaStudio and SolveTix cases a smaller, entrepreneurial-driven KIE does not have much time nor need for large scale planning activities. Much of their CSS work relates primarily to defining a corporate purpose, i.e. providing the young enterprise with a meaning and a clear strategic direction for the future. Therefore, an integrative role of the central planning unit, which in this context typically is the entrepreneur and his management team, is strongly related to the providing purpose function of the CSS. For example in the MachOne case, the entrepreneur and his management team are focussed on establishing a clear and transparent vision and overall strategy for the enterprise and are trying to integrate the various employees and departments around such strategic vision. Also in the InnoService case the 'corporate centre', which is also here the top management team, has been focussed on developing and integrating the enterprise around the purpose of the company, i.e. a new position and vision of direction. This combination of on the one hand a system driven by the establishment of purpose and on the other hand the focus of the entrepreneur (and his team) on integrating the organisation into a unified whole seem a natural match in InnoService. Finally, also in SolveTix the integration of people behind the common longer term vision of direction is the crucial role of the corporate centre, i.e. the management team, and is found in combination with the dominant providing purpose function of the corporate strategy system.

Proposition 3.b: *The CCP unit role of 'Catalysation' is natural (best fit),*

   when the 'Building resources' function is dominant.

The central planning unit role of catalysation lies in the catalysation of change processes of the corporation and its units of activity. Change processes with a big and lasting impact on the internal environment, have been described as typical in the context of fast growing, advancing KIE. The corporate centre, like in the first context, will in this context typically be the management team of the KIE. However, in comparison, they will need to spend much more time on dedicated planning activities, as high impact decisions have to be made in terms of for example resources commitment. This is because growth requires considerable investments and commitments in terms of resources. For this reason, the fast growth context was observed in relation to the dominance of the resources building function. When zooming in on the role of the corporate centre, the catalysing change role is proposed to be the naturally dominant one in this context.

Such combination between a fast change context where the resources building function occurs in relation with the catalysing change role of the corporate centre, was found in AdaptIT.com where the corporate centre is the management team and their prime role lies in the catalysation of change processes. In this particular case, the combination also correlates to the highly responsive features of the enterprise and the climate that is very encouraging to change. Also VERYSoft is a KIE that is aiming for fast growth through innovation. The corporate strategy system in this case supports the dynamic resources building process. The strong focus of the corporate centre, i.e. the management team, lies there in catalaysing and including all employees in the growth of the enterprise, especially during the corporate strategy processes.

This combination of the catalysing change role of the corporate centre therefore is a natural fit with a KIE focus on growth and quick adaptation, i.e. a typical context with resources building function of the CSS being dominant.

Proposition 3.c: *The CCP unit role of 'Brokering' is natural (best fit),*

   when the 'Positioning competitively' function is dominant.

The central planning unit's role of brokering is defined as the role of resolving conflicts (like mediators, diplomats) and aligning the development of the units of activity. Clearly a role of mediation and alignment is most strongly demanded in a context, which is inceptive to conflicts and diverging interests of the units of activity. The context three with its units of activity pulling the KIE in various directions is such context with diverging interests and orientation. As determined in proposition 2.c, the positioning competitively function has the primacy in this typical context. This context is typically found in a more mature enterprise with strong units of activity. The central planning unit in such context can be a planning team or department, or even more likely, a planning committee. The dominant role of the central planning unit in such context is proposed to be that of brokering.

This relationship is found most strongly in the TelEquip case. For example, the core role of the central planning unit (in this case a planning department combined with a planning committee) is to broker the dynamic positioning process in these turbulent contexts. There seemed to be a clear and natural connection between such focus on competitive positioning and the political, collaborative way of taking decisions. In this case, because of the entrepreneurial responsibility of the businesses (units), the corporate centre and planning

department can, and do, only play a brokering role in the planning process. Both individual business units and the corporate centre have important responsibilities and strong commitments towards taking strategic decisions and therefore the brokering role is natural in such dialogue (focussed on positioning) of the corporate centre with the various business units.

Proposition 3.d: The CCP unit role of 'Directing' is natural (best fit),

when the 'Composing businesses' function is dominant.

The composing businesses function has been identified as the primary CSS function in a context of a KIE with diversified business interests. Compared to other contexts, the KIE has a wide range of economic activities that is pursued. This context is typically also a mature enterprise in a volatile environment. The CSS has been proposed to be focussing strongly on creating a balanced selection of business interests. The proposition here is that in such context, the corporate centre plays a prime role of controlling the different units of activity and directing their development. Because of the size of the enterprise and because of the wide divergence of interests, it does not make much sense for the central corporate organs to go into all the details of the business decisions as *"the most effective decision makers are those at the business-unit level, where strategic perspective meets operating savvy"* [Eisenhardt & Galunic, 2000, p. 98]. As observed in the GlobalCar and DriveSupply cases, the central control and directing of UoA development should in this context be more regarded as focus on quantitative targets and central control on the performance measurement of the various units. In other words, in corporate strategy processes the centre sets quantitative targets for performance and the units are monitored for delivering on these targets. Also, the control over the corporate portfolio is a determining role in this type of context.

Proposition 3.e: The CCP unit role of 'Facilitation' is natural (best fit),

when the 'Coordinating units of activity' function is dominant.

In the context of a KIE consisting of units with strongly related and synergetical business interests, the CSS function of coordinating these units is primary. The corporate centre in this context is not exactly directing and controlling (as in context four), nor is it trying to mediate between the various units divergent interests (as in context three), but should more be seen as one important element in a team. It takes decisions, but also leaves freeroom for the various units to make their own decisions. The main orientation therefore is on facilitating an optimal corporate development process, where units are encouraged to collaborate whenever synergies can be expected. The proposition is that the prime role of the corporate central planning unit, which in this context can be expected to be a facilitating department or team, lies in the support and facilitating of the units of activity. This combination of the CSS coordination function and the facilitating role of a central planning department has been observed both in the InnoMobile and CoolSystem cases.

Proposition 3.f: The CCP unit role of 'Communication' is natural (best fit),

when the 'Coping interactively' function is dominant.

The coping interactively CSS function has been proposed to relate to a context with decentralised units of activity, in more loosely coupled network structures. In this type of context, the role of the corporate centre can not be expected to be very strong. A planning

department, team or committee is not very natural. This context, like the first and second context, can be characterised by a lower level of intensity of planning activities. However, as opposed to the context of the small entrepreneurial firm, the CSS in this context can be expected to have a number of decision making mechanisms and institutions in place. For example in the Linux case, as a loose network where there is neither a formal organisational structure with corporate centre, nor a formal corporate planning process, there are a number of institutions and mechanisms that fulfil these CSS functions in an emergent and to a large extent self organising manner.

The proposition made here is that in the context where coping interactively is the primary CSS function, the prime role of the central planning organ lies in providing a platform for communication among the units of activity. In the Linux case, with its (extreme) bottom up mode of decision making, the corporate strategy system consists of the (virtual) management hierarchy and decision making structure. The main decisions that are made by the organisation 'top management' (i.e. the community leader and his lieutenants) focus strongly on technical, product performance related issues. Through the transparency of the decision making mechanisms and the symbological role of the organisation leadership, the prime role of the central unit, in this particular case, lies in providing a platform for communication among the units of activity (the development projects).

7.3.4   Proposition four: CSS form and CSS function

When following the adagio 'form follows function', it is only natural to expect a number of distinctive forms in combination with distinctive functions. This fourth and final proposition claims that in relation to the dominant CSS function in its typical context, a number of other key properties of the CSS will naturally be found as well. These properties are determining characteristics of the form of the CSS in its context.

Proposition 4: *Each of the dominant CSS functions will be found in relation to a certain set of key properties of the corporate strategy system shape and form.*	
P 4.a	In a context where the 'providing purpose' function is dominant, lack of formal organisational arrangements and poor planning capabilities characterise the CSS.
P 4.b	In a context where the 'building resources' function is dominant, a time bridge orientation and quick adaptation characterise the CSS.
P 4.c	In a context where the 'positioning competitively' function is dominant, formalised planning procedures, a planning committee and a mixed decision making flow characterise the CSS.
P 4.d	In a context where the 'composing businesses' function is dominant, operative / quantitative focus, a planning department and strong performance management processes characterise the CSS.
P 4.e	In a context where the 'coordinating units of activity' function is dominant, distributed commitment characterises the CSS.
P 4.f	In a context where the 'coping interactively' function is dominant, self organisation and bottom up decision making characterise the CSS.

Table 7-4: Proposition four – CSS form and CSS dominant function

Proposition 4.a: *When the 'Providing purpose' function is dominant, lack of formal*

organisational arrangements and poor planning capabilities characterise

the CSS.

This proposition suggests that in a context where the CSS providing purpose function is dominant two additional attributes of the CSS will be key, namely a *lack of formal organisational arrangement* and a *poor level of planning capabilities*.

The providing purpose function has primacy in the context of young and dynamic enterprises. In this context, there is typically no real need for large scale, formal arrangements for the organisation in general. Therefore, it can be expected that there are typically also not many formal organisational arrangements for the corporate strategy system. Just like the entire enterprise is in an early phase of the corporate lifecycle, the corporate strategy system in itself is also typically at an early stage of development. This is exemplified by the InnoService case where there are no formal planning processes or organs specified. Accordingly, there is a low level of people involvement and little management attention is paid to long term strategising. In the same case, the context of an entrepreneurial, fast developing enterprise is naturally fitting with more informal, emergent processes of strategy formation.

That in this type of context there is a low level of planning capabilities can be explained by a typical low level of general management experience and capabilities. Also, there seems no real need for extensive planning capabilities, as this context is relatively planning-unintensive. This aspect is often addressed in SME literature that suggests that a relatively small firm size is likely to be accompanied by limited financial, personal and material resources and a strategy practice where *"we see an emphasis on visionary strategy creation and … Sophisticated analysis and planning is less likely."* [Thompson, 2001] Instead of sophisticated analysis and planning, the context one with informal strategising and day to day decision making is also observed in combination with the driving force of the entrepreneur or management team. For example in MachOne, the strong dominance of the entrepreneur and informal decision making processes seem to be a natural fit. As in the SolveTix case, strategy in this typical context lives and emerges as a pattern of day to day decisions. Also in the MachOne case, the single business, small enterprise context has been observed in combination with a lack of formal strategic planning processes. Also in this particular case, poor planning capabilities and providing purpose CSS function are a natural fit within the dynamic, entrepreneurial driven reality of a small enterprise.

Proposition 4.b: *When the 'building resources' function is dominant, a time bridge*

orientation and quick adaptation characterise the CSS.

This proposition suggests that in a context where the building resources function is dominant two additional properties of the corporate strategy system will be found to be key as well. One is a time bridge planning horizon, i.e. short, medium and long term views are considered and consistency is emphasized. The other one is a change climate of quick adaptation, i.e. changes get realised quickly as there is a general willingness to change and formation and realisation of strategy is highly interconnected (probably in parallel).

The *time bridge planning horizon* can be explained by the orientation of the company on growth and resources building. The fast growth processes involve considerable fast changes in the internal (and external) environment of the KIE. The CSS needs to be able to deal with these changes by short and medium term focus of planning. On the other hand, the required

investments in resources for growth often have long term aspects, e.g. it takes a long period of time to develop core competencies. Moreover, in phases of quick change it is easy to get disoriented and a focus on the longer term vision of the business is necessary. Therefore, as was observed also in the AdaptIT.com case, a time bridge planning horizon is a critical attribute in this context.

The *quick adaptation change climate* is inherent to the heavy demands put on the KIE to cope with fast growth processes. In this context typically some more systematic planning processes might take place. However, the quick adaptation attribute is often reflected in the close connection between strategy formation and realisation processes. This phenomenon is also observed in literature, namely that in high dynamic environments strategy formulation and implementation should be the same and should best be done in parallel [Feuer & Chahabarghi, 1997]. This was observed also in the AdaptIT.com case, where the operational decision making, mainly as part of day to day activities, and the focus on execution and realisation of strategy go hand in hand. The strongly intertwined conduction of strategy formation and realisation processes can on the one hand be explained to some extent by the relatively small size of the enterprises, but on the other hand the stronger argument is the necessity posed by the high change environment. The quick adaptation climate was thus observed in combination with the resources building dominated context of the VERYSoft and AdaptIT.com case studies.

Proposition 4.c: *When the 'positioning competitively' function is dominant, formalised*

                       planning procedures, a planning committee and a mixed decisionmaking

                       flow characterise the CSS.

This proposition claims that in a context where the positioning competitively function is dominant, the CSS will also be characterised by formalised planning procedures, a planning committee and a mixed – both bottom up and top down - decision making flow.

As has been noted earlier, this type of context is highly planning-intensive due to various reasons. Also, because much is at stake, it is therefore necessary to be able to rely on a formal procedure for corporate planning and that the different activities are conducted in a systematic and predefined (standardised) manner. In this way, *formalised planning procedures* are not only explained by the mere size and maturity of the KIE, but much more by the necessity for the CSS to provide a fair and transparent process for all involved parties.

In the TelEquip case the environment is highly 'planning-intensive'. Its corporate strategy system is mature and systematic. Moreover, the system is formalised, extensive and involves many people from various groups inside the enterprise, e.g. a planning department, a planning committee and managers on corporate level and from the business units.

In the context where the primary role of the central planning unit lies in brokering between the interests of the corporation and the various strong units of activity, *a planning committee* provides a good environment for processes of compromise finding as representatives of both the centre and units of activity can all be involved as the main body for corporate strategy processes.

The key property of a *mixed decision making flow* can also be explained in this context. With strong units of activity following formal planning procedures in a planning committee automatically leads to a situation where the main strategic decisions are taken in cooperation between the corporate centre and the unit of activity.

Proposition 4.d: When the 'composing businesses' function is dominant, operative /
quantitative focus, a planning department and strong performance
management processes characterise the CSS.

This proposition claims that in a context where the composing businesses is the dominant function, the corporate strategy system will also be characterised by an orientation on quantitative issues, a formal planning department and a crucial role of performance management processes.

This is the context of the diversified, multi business KIE where the corporate central planning unit controls the units of activity. As in this context many of the business specific decisions are typically left to the units directly dealing with them, the CSS focuses on analysing and optimising the portfolio of these businesses. In some way, this behaviour resembles that of a central investor with a strong focus on *quantitative issues*. There is an orientation of the CSS to set (financially oriented) targets and monitoring their performance (controlling the investments deliver return).

Not only because of the typical large size of the entire corporation, but more because of the strong role of the corporate centre, a *planning department(s)* with a fixed staff that can conduct all the (quantitative) analysis, planning and control activities seems absolutely necessary. This department will typically be directly related or even located inside of for example controlling or finance departments.

In the same logic, the continuous and emphasised conduction of *performance management processes* - e.g. monitoring strategy realisation, corporate control and progress measurement - has a very strong role in the corporate strategy system. This emphasis on performance management in combination with a strong planning department has been observed in the DriveSupply case, in combination with the composing businesses function.

Proposition 4.e: When the 'Coordinating units of activity' function is dominant, distributed
commitment characterises the CSS.

This proposition claims that in a context where the coordinating units of activity function is dominant, the corporate strategy system will also be characterised by a distributed commitment of management responsibility. This is the context of a KIE with synergetic units of activity, where the prime role of the central planning unit lies in facilitating the development processes of these units. The cooperative of units are working together, expanding core competencies and looking for innovation collaboratively. Such cross business (and in business) innovation requires that both the corporate centre and management of the various units have a fair amount of involvement and commitment for the corporate strategy processes. In this way, *distributed commitment* – i.e. management is committed and the ownership over the processes is distributed – is demanded in order to truly be able to create synergies between the various units. This combination of distributed management commitment with coordinating units of activity function dominance can be observed both in the CoolSystem and InnoMobile cases.

Proposition 4.f: *When the 'Coping interactively' function is dominant, self organisation and bottom up decision making characterise the CSS.*

This proposition claims that in a context where the coping interactively function is dominant, the corporate strategy system is also characterised by self organisation processes blueprint and a bottom up decision making flow.

The property of a *self organisation* process blueprint implies that the CSS processes do not follow any scheme, apart from self organisation. For example in the Linux case, the strongly self organising processes seem a natural fit with the flat collaborative network connected individual volunteers (testers and developers), users, commercial enterprises, groups (lobby, user) and other stakeholders (politics).

In the same case, an (extreme) *bottom up mode of decision making* is observed as the role of the corporate centre is very modest and primarily oriented on providing a platform of communication. The coping interactively function of the CSS is in strong demand as there is typically a clear opportunistic and emergent pattern of corporate development. In this way, as observed in the Linux case, the coping interactively function of the corporate strategy system fits very well in a decentralised, bottom up and self organisation context of the loose network.

In summary, we have transformed the various relationships between CSS functions and properties that were observed in the case syntheses into a coherent set of four propositions. The first proposition claims that there are six typical corporate strategy system contexts. This proposition implies that the context of any corporate strategy system in any knowledge-intensive enterprise will resemble one of these typical contexts. The second proposition claims that in every knowledge-intensive enterprise one or more of the primary CSS functions are fulfilled, and in every typical context one of these will be clearly dominant and most appropriately fitting the context properties. The third proposition claims that although there are various roles that a corporate central planning unit (e.g. department or team at the corporate centre) can play in a knowledge-intensive enterprise, the dominant role of the corporate central planning unit fits with the dominant CSS function. The fourth proposition claims that in relation to the dominant CSS function in its typical context, a number of other key attributes of the CSS will naturally be found as well.

7.3.5   Configuration hypothesis

We have now come so far that we can formulate the configuration hypothesis. In this step of 'configuration construction', the sets of propositions that have been described above are combined. The logic behind the fact that all sets have the same number of sub propositions is that these sub propositions are linked logically together fitting to each typical context. When combining the proposed relations between the properties of context and system, the structure of configurations can be established as is depicted in the following table.

The types of context are defined by the first proposition. Proposition two defines the relation between each of these contexts and the dominant CSS function. Proposition three defines the relation between the CSS functions and the role of the central planning unit. Proposition four defines the relationship between the CSS function and the CSS form. The so constructed configurations (see following table) have been named Informal Shaper, Catalysing Builder, Power Positioner, Centralised Composer, Synergising Coordinator and Emergent Evolver.

The reasoning behind these names and the detailed model of each configuration will be described in detail in the following. The schematic list of properties for each configuration is provided in the appendix D.

The last subquestion posed at the outline of this research was formulated as follows: *what are the types of contexts of knowledge-intensive enterprises and what patterns of corporate strategy system functions, processes and properties can be identified in each of these typical contexts?* The initial part of this question (types of contexts) is answered by the proposition one. The second part (patterns) is addressed by the combination of proposition one with the other three propositions, i.e. the configurations as displayed in overview in the following table are the patterns of CSS function and properties (fitting with the typical contexts). These patterns will be described in more detail in the following paragraphs.

Context	CSS Primary Function	CCP Unit Role in the KIE	Other key properties	CONFIGURATION
Entrepreneurial KIE being formed (CSS as informal strategising)	Providing the enterprise with a meaning and a global sense of direction	Leading people and integrating the organisation into a unified whole.	• Lack of formal organisational arrangements • Poor planning capabilities	**Informal Shaper**
Fast growing, advancing KIE (CSS as catalyst for change)	Selecting, developing and leveraging strategic resources	Catalysation of change processes of the corporation and its units of activity.	• A time bridge orientation • Quick adaptation	**Catalysing Builder**
KIE dealing with competitive forces (CSS as compromise finding)	Determining a sustainable competitive position of the enterprise in its environment	Resolving conflicts (like mediators, diplomats) and aligning the development of the units of activity.	• Formalised planning procedures • Planning committee • Mixed decision making flow	**Power Positioner**
Diversified, multibusiness KIE (CSS as central control centre)	Composing a balanced selection of businesses (or units of economic activity)	Controlling the different units of activity and directing their development.	• Quantitative focus • Planning department • Strong performance management processes	**Centralised Composer**
KIE with collaborating and synergetic units (CSS as facilitator)	Coordinating the units of activity (and their development) of the enterprise	Support and facilitating of the units of activity.	• Distributed commitment	**Synergising Coordinator**
Loose networked KIE (CSS as self organising platform)	Optimising the corporate evolutionary process by preparing for and dealing with unanticipated events	Providing a platform for communication among the units of activity.	• Self organisation • Bottom up decision making	**Emergent Evolver**

Table 7-5: Configurations in overview

7.4   Configuration I – "Informal Shaper"

The first configuration is named 'Informal Shaper'. *'Informal'* relates mainly to the characteristic of no or few formal organisational and process arrangements for the corporate strategy system. Furthermore, the overall management style of the KIE in an early stage of the corporate lifecycle is mainly informal. The term *'Shaper'* relates both to the dominance of the providing purpose function, which in its essence is about establishing the core of the business and "shaping" the long term vision of the KIE. Furthermore, the KIE is in its formation stage and is thus itself also being "shaped". This configuration is grounded on the combination of propositions 1a, 2a, 3a and 4a.

Introduction – Informal Shaper

The Informal Shaper is the typical context where the corporate strategy system does not have a very formalised, systematic shape. There are only few routines and a low level of experience with corporate strategy processes. The CSS can be characterised as informal strategising and consists mainly as day to day decisions. The primary CSS function is to provide purpose, and the according role of the corporate centre (the entrepreneur and his management team) lies in leading people and integrating the organisation into a unified whole. Moreover, the CSS is characterised by a lack of formal organisational arrangements and poor planning capabilities.

Configuration at a glance: Informal Shaper	
External environment	Being a young, small enterprise, the KIE is not clearly distinguished and has no power position in its value web.
Internal environment	The KIE is in its formation stage of the corporate lifecycle, i.e. the enterprise is in its infancy, being formed and shaped.
CSS Function	The dominant CSS function lies in providing purpose. The management team aims to guide the KIE by creating a shared understanding of the situation and a commonly aimed for sense of direction
CSS Processes	Most decisions are taken informally, during day to day activities. The difference between strategy formation and realisation does not really exist.
CSS Properties	The CSS is characterised by a lack of formal organisational arrangements.
	The corporate centre and CSS consists mainly of the entrepreneur and/or a small management team of the forming KIE. Their primary role lies in leading people and integrating the organisation into a unified whole.
	The Informal Shaper does not need and does not have extensive planning capabilities, i.e. there is a low level of planning activities and experience.

Table 7-6: Informal Shaper – configuration at a glance

The context and corporate strategy system of the Informal Shaper, as depicted at a glance in the table above, will be described in more detail below.

Context – Informal Shaper

The Informal Shaper is the typical context of a KIE that is either very small or young, i.e. an enterprise in its 'formation' stage of the lifecycle. The Informal Shaper can be a KIE in its infancy being formed and shaped, a pioneer that is establishing its business and defining its core. Examples could be entrepreneurial firms, startups, small or young SMEs (small and medium sized enterprises), small R&D firms and other innovators.

Informal Shapers can be expected to be found more often in external environments that are highly dynamic, for example in young or fast changing industries. Through the overall pace of change in the markets it becomes more interesting for entrepreneurs to become active in such markets. But of course, Informal Shapers can also be found in more mature and established markets, where they would focus more on (new) niches.

As the enterprise is small and dynamic, it is typically specialised or focussed on a relatively small number of products or services. This implies that accordingly there is a rather low level of diverse competitive forces that confronts the KIE. As the Informal Shaper is typically small, the intensity of these forces and especially their impact on the KIE will be moderate as well. Being a small and young enterprise, the Informal Shaper will not have a strong power position in the overall value web. Still, it can be expected to have a small variety of strongly connected stakeholders, such as for example its customers, investors/bank and few suppliers or partners.

The Informal Shaper is typically a KIE in its infancy that is being formed and shaped. The Informal Shaper is in a process of defining its essence of the firm, for example its core products, core markets and customers, i.e. it is shaping its core business logic (the theory of the business). This search for establishing a clear profile is combined with a focus on defining and delivering product value, i.e. the KIE is aiming to define and improve its products or services by providing highest possible value.

The Informal Shaper can for example be grounded by an entrepreneur with a clear technical or business idea, who is still personally involved and has a strong impact on the business. The Informal Shaper will be focussing predominantly on its one main area of business that it is involved in. It will therefore try to make incremental, but fast, steps to improving the original business concept. The Informal Shaper is either a 'Learner' aiming to advance its resources base through incremental innovation or a 'Technology constructor' that is mainly incrementally developing new technology.

An Informal Shaper will typically be a KIE with a simple organisational structure, for example a simple, functional hierarchy or a project based structure. The entrepreneur and/or management team will have a strong influence on the units of activity and a lot of collaboration between these units of activity might not be necessary. The Informal Shaper is thus typically a centralised pyramid.

Being a small, agile firm the Informal Shaper is characterised by being very adaptive (both reactive and proactive). On the one hand as a KIE driven by an entrepreneurial vision, it wants to be proactive and shape the markets. On the other hand, it is dependent on the few customers and other key stakeholders it has, and therefore it needs to be reactive to external pulses too.

Corporate strategy system – Informal Shaper

The corporate strategy system of the Informal Shaper will have no or only few formal planning processes or organs specified. This is explained by the relatively small size of the company with limited resources and typically low levels of experience resulting in not much need for extensive formal corporate strategy systems. Even though there might be exceptions (see the VERYSoft case study), it can be expected that just like the entire enterprise is in an early phase of the corporate lifecycle, the corporate strategy system in itself is also typically at an early stage of development. Strategic planning does not have to be highly formalised at this stage and the entrepreneur, or a small management team, takes

a strong personal influence by taking decisions of which most are done during day to day operations.

The strategy in an Informal Shaper is not made explicit, but will exist in the format of a common mental model, a broad notion about meaning and direction. Strategic decisions are taken during day to day operations, whenever they come up. In this way decision making is done rather ad hoc, i.e. in crisis type of meetings. Apart from a discussion about the longer term vision and purpose of the KIE, the management team will predominantly focus on short to medium term issues. Most of the issues will be addressed in a qualitative manner.

The corporate strategy system processes of the Informal Shaper consists mainly of the informal discussions of the entrepreneur and his/her management team amongst themselves and together with key customers, investors or employees. These informal discussions with strategic impact will be focussed around establishing a common sense of direction. For the Informal Shaper, the providing purpose function is the main function of the corporate strategy system. Although a low level of people involvement might be expected, the little management attention that is paid to long term strategising, will be centred on providing the enterprise with a meaning and a global sense of direction. To provide purpose is a logical primary function for the management team, because the young, small or entrepreneurial KIE is itself naturally focussed on orienting in the overall market and further environment.

The Informal Shaper configuration is characterised by a lack of formal corporate planning procedures and lack of formal organisational arrangement for the corporate strategy system. Due to informal and small scale character of the KIE and the according low planning-intensity, there is typically no real need for large scale, formal arrangements for the organisation in general. The borderline between strategy formation and realisation is not really existent in the Informal Shaper context. The more reflective discussions related to providing purpose could be considered strategy formation. All in all, for the Informal Shaper strategy lives more as a pattern of decisions. The corporate strategy system processes do not follow any scheme, apart from self organisation.

The corporate centre in the Informal Shaper consists of the entrepreneur and his/her (small) management team. They can be expected to make the decisions in a strong top down manner. However, they will also be collaborating with the units of activity in realising these decisions. The management team, i.e. corporate centre, plays a strongly integrative role in the KIE. They are focussed on leading employees and integrating the organisation into a unified whole. This role is crucial in enterprises that are orienting themselves in the marketplace and determining their purpose in the overall ecosystem of corporate stakeholders.

As the Informal Shaper is planning-unintensive, it does not have much time nor need for large scale planning skills and activities. Overall, there is a narrow and weak involvement in corporate strategy activities and also management do not dedicate significant attention to it. This makes it understandable that there is a low level of planning capabilities, as this informal, emergent strategy practice is a naturural fit with the dynamic, entrepreneurial driven reality of the Informal Shaper.

Due to this informality and therefore speed of decision making, the Informal Shaper possesses a strong absorptive flexibility. There is a strong openness to identify external signals, e.g. customer needs, and the KIE is able to quickly take necessary actions to deal with these signals in a flexible manner. This leads to a situation where changes get realised quickly as there is a general willingness to change. The earlier addressed interconnectivity of formation and realisation of strategy is essential in this aspect.

7.5   Configuration II – "Catalysing Builder"

The second configuration is named 'Catalysing Builder'. *'Catalysing'* relates mainly to the key focus of the corporate strategy system to catalyse change processes in the KIE. The term *'Builder'* relates to the dominance of the resources building function. Furthermore, the KIE is in its advancement stage of the corporate lifecycle and is thus itself in a process of "being build". This configuration is grounded on the combination of propositions 1b, 2b, 3b and 4b.

Introduction – Catalysing Builder

The Catalysing Builder is the typical context where the CSS acts as a catalyst for change. Both the internal and external environment of the Catalysing Builder are changing fast. The KIE is in the advancement stage of the corporate lifecycle and therefore needs considerable planning skills and activities in order to realise sustainable growth. The primary CSS function therefore is to realise these growth processes through selecting, developing and leveraging strategic resources. The according role of the corporate centre (the management team) lies in the catalysation of change processes of the KIE. Moreover, the CSS is characterised by a time bridge orientation and quick adaptation capabilities.

Configuration at a glance: Catalysing Builder	
External environment	The Catalysing Builder can be expected to be found in dynamic environments. Changes caused by external environment factors occur very frequently.
Internal environment	The KIE is in the advancement stage of the corporate lifecycle and is aiming for (fast) growth in nearby businesses. The Catalysing Builder is particularly adaptive and has strengths both in reacting and being proactive.
CSS Function	The dominant CSS function is the resources building function. The Catalysing Builder pursues corporate development through making best use of its resources.
CSS Proceses	In order to manage change processes, the activities related to strategy formation and realisation need to be strongly connected in the Catalysing Builder.
CSS Properties	The corporate strategy system in order to make growth sustainable needs to consider short, medium and long term views on corporate development.
	The corporate centre in the Catalysing Builder is often the management team (possibly supported by one or few planning delegates). Their primary role lies in the catalysation of change processes of the KIE.
	The change climate is one of quick adaptation, i.e. changes get realised quickly as there is a general willingness to change.

Table 7-7: Catalysing Builder – configuration at a glance

The context and corporate strategy system of the Catalysing Builder, as depicted at a glance in the table above, will be described in more detail below.

Context – Catalysing Builder

The typical context of the Catalysing Builder is one where the knowledge-intensive enterprise is in a process of rapid advancement and growth and where the corporate strategy system is a catalyst driving these changes. Compared to the Informal Shaper, the corporate strategy system is getting some shape and form, as typically the size of the enterprise is bigger and corporate strategy processes are required in order to identify and select opportunities for growth. However, many of the corporate strategy system processes still might have an

informal character. Examples can be found in high growth firms, advanced SMEs or adaptive firms in dynamic environments.

The Catalysing Builder can be expected to thrive well in a dynamic environment where changes caused by external environment factors occur very frequently. Due to its responsive characteristics it will be able to deal with these changes. Due to its proactive features it will try to have some influence and look for new growth business areas. In such dynamic environments, a heterogeneous group of different competitive forces confronts the KIE. However, with the high speeds of change and the relatively smaller size of the KIE, these forces are of rather moderate intensity. Also, with a broader number of forces happening simultaneously, new external constellations will be formed and shaped. The Catalysing Builder thereofore is confronted with a wide (and changing) variety of stakeholders. As the relationships are changing continuously, individual stakeholders are without much influence on the enterprise. The KIE is searching and building its position in the overall web of relationships and market dynamics, and will typically have a weak position in the overall industry. As a consequence, the enterprise is not clearly distinguished (possibly apart from some small niches) and has no power position in the value web.

One defining characteristic of the Catalysing Builder configuration is that the KIE is rapidly advancing its resources and activity system (it is in the advancement stage). The Catalysing Builder is primarily pursuing growth in nearby businesses (in terms of product or market similarity). Examples of typical growth moves can be globalisation, vertical integration and related diversification. Replication and multiplication of resources and activities are key drivers of such growth processes. Due to these fast growth processes and as a consequence of the demands of a highly dynamic environment, the Catalysing Builder needs to be very adaptive, i.e. strong in both reacting (to external forces) and being proactive.

The Catalysing Builder can be expected to be either a technology disruptor or a paradigm breaker. Also, it can be expected to either be focussed on delivering customer or product value. In case of a technology-intensive KIE, the enterprise is aimed at growth through providing more value through technological and product leadership and is radically changing its technological resources base. In case of an information-intensive or talent-intensive KIE, the enterprise is looking for growth through providing more products or services aimed at offering highest possible value to customers and is radically innovating its knowledge base.

In terms of structure and form, the Catalysing Builder is typically an enterprise with one main area of business (and expanding into related fields) and an integrated corporation with strong relationships among the units of activity and with the corporate centre.

Corporate strategy system – Catalysing Builder

The Catalysing Builder is characterised, among others, by the dominance of the resources building CSS function. In this context, the KIE pursues corporate development by focussing on making best possible use of its existing resources base and quickly building up new corporate resources. The corporate strategy is an explicit but broad statement on the course of action and will include mainly a set of corporate targets for the modalities of growth and/or guidelines on the advancement of the resources and activities system. One key characteristic of the Catalysing Builder configuration is that the corporate strategy has a time bridge planning horizon, i.e. short, medium and long term views are considered and consistency is emphasized. This can be explained by the orientation on fast growth processes that require the CSS to be able to deal on the one hand with system changes on

short and medium term and on the other hand with longer term investments in resources. In this context, a balanced approach with the corporate strategy system integrating both harder and softer types of issues is likely. Qualitative issues are for example related to the longer term vision and according strategic direction for growth. Quantitative issues are for example related to investments in resources and business cases for new growth initiatives.

The corporate strategy system of the Catalysing Builder needs some processes and organisational arrangements, as the development of resources and their allocation for growth opportunities requires strategising. The Catalysing Builder typically follows informal working processes, i.e. there is a strategic planning process defined, but within this frame there are mainly informal working processes. This relates to the contained creativity attributes of the flow of processes. There is a formatted design, but the Catalysing Builder needs room for dealing flexibly with unanticipated events or unforeseen opportunities. Although in comparison with the Informal Shaper this context is more planning intensive, a full blown planning process is not very likely and not necessary in this configuration. Corporate strategy processes evolving around strategic projects or few planning events is enough to determine the direction of growth and resources building investments. In comparison with other more mature business contexts (e.g. Power Positioner, Centralised Composer and Synergising Coordinator) the Catalysing Builder is typically smaller and more informal and will require entrepreneurial creativity.

The corporate strategy system in the Catalysing Builder can be expected to consist of the management team and senior managers in charge of the main units of activity. One manager (or assistant) might have some specific responsibilities related to e.g. overseeing strategic projects or organising the planning events. As growth and advancement concern the whole KIE, all UoA managers and employees will be affected in some way or another by the corporate strategy processes. The main strategic decisions should therefore be taken in cooperation between the management team (corporate centre) and the units of activity. Still, some decisions might be taken centralised, such as for example the long term direction of growth. Also, the involvement of all employees in some way or another, e.g. in strategy discussions, is crucial in order to be able to adapt quickly.

The corporate centre in the Catalysing Builder is typically the top management team, possibly with one or two assistants dedicated to the corporate strategy work. The role of the management team lies in the catalysation of change processes of the enterprise and its units of activity. This catalysing change role of the corporate centre can be explained by the KIE focus on growth and quick adaptation, i.e. a typical context with resources building function of the CSS being dominant. With a relatively small size of the KIE, informality of strategy processes and the mixed (both bottom up and top down) flow of strategic decision making requires a very strong connection between strategy formation and realisation processes. They can typically not be really separated from each other in this configuration. For example the conduction of strategic projects, e.g. exploration of a new business opportunity, will directly involve formation and realisation activities.

Another key characteristic of the Catalysing Builder configuration is a change climate of quick adaptation, which is explained by the heavy demands put on the KIE to cope with fast growth processes. This quick adaptation attribute is also supported through the close connection between strategy formation and realisation processes. The top management team take full responsibility for the corporate strategy processes and dedicates a significant amount of their time to strategizing. However, in order to be able to change quickly, they will focus even more on realisation matters and will try to delegate and create freeroom for the UoA

managers (e.g. senior project managers, core product managers or service line managers) and employees to make their own decisions. Overall the amount of actual corporate strategy formation activities is rather low, but will be conducted with small but highly involved groups, such as e.g. in planning events or strategy projects. Gut feeling will be dominant in these activities as strategies are formed and realised by experienced managers but without much systematic use of latest planning tools and techniques. With the company climate focussed on change and advancement, the Catalysing Builder needs a strong absorptive flexibility, i.e. an openness to identify external signals such as new growth opportunities or unforeseen events. Due to the informal and quick working processes and overall positive change climate, the CSS is able to take necessary actions quickly to deal with these signals in a flexible manner and changes in this way can get realised quickly. The Catalysing Builder thus has a high general willingness to change and its CSS with strongly connected formation and realisation processes strengthens this adaptive capabilities.

7.6   Configuration III - "Power Positioner"

The third configuration is named 'Power Positioner'. *'Power'* relates mainly to the power struggle of the KIE in its highly competitive markets. Furthermore, the CSS acts as a broker between powerfull forces from centre and the units of activity. The term *'Positioner'* relates to the dominance of the positioning competitively function, which in its essence is about establishing a powerfull and dominant position in the overall value web. This configuration is grounded on the combination of propositions 1c, 2c, 3c and 4c.

Introduction – Power Positioner

The Power Positioner is the typical context where the corporate strategy system is characterised by political compromise finding. The dominant CSS function lies in determining a sustainable competitive position of the KIE in its environment. The main role of the corporate centre, which might involve a central planning staff, is to resolve conflicts (like mediators, diplomats) and aligning the development of the units of activity. This context is highly planning intensive and involves strongly formalised planning procedures. Moreover, the corporate strategy system is characterised by a planning committee and a mixed (bottom up and top down) decision making flow.

Configuration at a glance: Power Positioner	
External environment	The external environment is characterised by heterogeneous and highly competitive forces. In this environment of hypercompetition, the KIE as a distinguished participant is recognised by its customers, but still has a rather weak position in the value chain.
Internal environment	The internal environment is characterised by the collaborative structure of a centralised pyramid where there is not a lot of collaboration between the units of activity. Bilateral relations between the corporate centre and the individual units are crucial in strategising.
CSS Function	The primary CSS function is positioning competitively, as the KIE is focussed on establishing a more powerfull position within the overall value web than the competitors in delivering value to customers (and other stakeholders).
CSS Proceses	This configuration is highly planning intensive and especially activities related to systematic strategy formation, i.e. strategic planning, are crucial.
CSS Properties	The corporate strategy system is well developed and has formalised planning procedures that are conducted according to a predefined (standardised) manner.

	There is a formal central planning unit (department or team) of which the prime role lies in resolving conflicts and aligning the development of the units of activity. The main strategic decisions are taken in cooperation between the corporate centre and the individual units of activity, either in bilateral discussions or in a committee, which might have changing participation models, but will typically involve representatives of the centre and units of activity.
	Management in all parts of the KIE dedicate significant time and effort to strategic planning activities and according compromise finding.

Table 7-8: Power Positioner – configuration at a glance

The context and corporate strategy system of the Power Positioner, as depicted at a glance in the table above, will be described in more detail below.

Context – Power Positioner

The Power Positioner environment is characterised by a combination of strong competition (*hypercompetition*) and a KIE not being dominant (*distinguished participant*), which leads to a situation where the enterprise needs to put all its efforts into trying to keep up or move ahead. The heterogeneous and highly competitive forces lead to an external environment with extremely *volatile change patterns*. In such volatile environments it makes sense to look for strong connections with stakeholders. In this way, the impact of the changes might be 'dampened' by the *intricate stakeholder web*. Especially relations with customers, suppliers and strategic partners are important.

In contrast to the previous two configurations, the Power Positioner is typically a much more *mature and larger enterprise*, which has a number of businesses it is in, or has a number of larger units of activity. The collaborative structure is a *centralised pyramid*, where there is not a lot of collaboration between the units of activity. With competitive forces in the markets pulling the businesses into various directions, naturally leads to an internal corporate situation where compromises between the units need to be made and politics gains in influence.

The Power Positioner is typically a KIE that is active in a number of *related businesses*. As the KIE is oriented to gain a more distinguished position in the markets, it is natural to strongly orient on the customer needs and an according provision of products or services aimed at offering highest possible *value to customers*. Customer economics and customer intimacy are important concepts in this context. Although radical innovation might be required too, the Power Positioner will focus on delivering customer value through *incremental innovation*. Volatility of the markets means that changes do not occur so regularly (only if there are changes, they will have a big impact on the KIE) and therefore it will be sufficient for the Power Positioner to mainly incrementally advance its knowledge base or incrementally develop new technology.

Although in this mature and volatile context there is not so much room for growth (especially compared to the Catalysing Builder context), the orientation is on *growing in nearby (in terms of product or market similarity) businesses*. The Power Positioner aims to follow new demands of customers and delivering unique solutions for them that distinguish the KIE in its value web position. With an orientation on market and customer movements, the Power Positioner is aiming to be *strong in reacting* to external signals to change. Also due to the volatility of the markets and relatively weak position in the value web, the Power Positioner does not have much room for being proactive and can even be rather *vulnerable* in terms of its low level of adaptivity to change signals.

Corporate strategy system – Power Positioner

The corporate strategy system of the Power Positioner is geared towards continuously aiming to establish the KIE within hypercompetitive dynamics. The CSS function of positioning competitively is the natural primary function. This context is planning intensive and as stakes are high, much value is placed on establishing mature and systematic corporate strategy procedures.

The corporate strategy system is characterised by formalised planning procedures and the results of these procedures, i.e. the corporate strategic plan, is made *explicit* and is *detailed* to a large extent, for example in the shape of reports. The planning procedures follow a predetermined format and are repreated as *rotating planning cycles*, e.g. in annual planning cycles. In terms of the time horizon, the CSS deals especially with *short, medium and longer term issues* related to the markets, competition and customer dynamics. Consistency between these time horizons is expected as all these aspects of strategic positioning include short/medium (e.g. customer needs, competitive tactics, product developments, etc.) and longer (e.g. strategic partner networks, industry long term cycles, etc.) term matters. Also in terms of corporate strategy orientation a *balanced approach* integrating quantitative and qualitative issues can be expected.

The high formalisation of planning procedures are not only explained by the mere size and maturity of the KIE, but much more by the necessity for the CSS to provide a fair and transparent process for all involved parties. The organisational arrangement of a *planning committee* provides a good environment as the main body for corporate strategy processes. In this way, representatives of both the corporate centre and the various units of activity can all be involved with similar influence. A planning committee provides a transparent platform for a political, collaborative way of taking decisions and for compromise finding between diverging interests. The Power Positioner configuration is determined by such processes of compromise finding between units of activity and the corporate centre, as there is a continuous struggle and need for political processes, e.g. in setting priorities and committing resources for the different business interests. With strong units of activity following formal planning procedures in a planning committee automatically leads to a situation where the main strategic decisions are taken in cooperation between the corporate centre and the unit of activity (*mixed decision making flow*).

The blueprint of the corporate strategy system processes is that of *process control*, as they are conducted in a predetermined manner. The Power Positioner is a highly planning intensive context and puts especially strong demands on both the processes of *strategy formation*, but also on *corporate intelligence*. Being able to *position competitively* in the environment requires that there is a broad basis of information and analysis about everything that happens in the external environment, e.g. related to competitor movements and customer needs.

The Power Positioner apart from its primary organ, the planning committee, will typically also have a central planning team or department. On the one hand, they can play a supportive role in conducting the 'hands on' work of planning, such as e.g. information collection and reports writing. On the other hand, the central planning unit plays a key mediating *role of a broker* in resolving conflicts and aligning the development of the units of activity.

The various strong units of activity - which might be business units, product/market groups or geographical units – have a strong entrepreurial task in positioning and delivering value to customers. This is reflected in a *distributed commitment*   of   management   responsibility.

Top management acknowledges the importance of planning processes and dedicate their attention to it. However, there is also strong entrepreneurial commitment of the unit managers.

In this way a *broad and intense participation* of people is characteristic of the Power Positioner configuration. Not only are management of the corporate level and units involved, but also *highly trained* planning specialists using latest management tools. Especially due to the political processes of finding compromises, which by nature is time consuming, there is a *low flexible absorptive capacity*. In corporate intelligence activities external signals are identified, but it takes some time to deal with these inputs in a flexible manner. Related to this, but also because of the focus on incremental innovation, the Power Positioner typically has a change climate of *small steps change*. As various strong parties with diverging interests are involved, big drastic steps of change are less likely as an outcome of the corporate strategy system.

7.7   Configuration IV - "Centralised Composer"

The fourth configuration is named 'Centralised Composer'. *'Centralised'* relates to the strong and dominant role of the corporate centre within the corporate strategy system. The term *'Composer'* relates to the primary CSS function of composing businesses, which in its essence is about composing the portfolio of business activities of the KIE. This configuration is grounded on the combination of propositions 1d, 2d, 3d and 4d.

Introduction – Centralised Composer

The Centralised Composer is the typical context where the corporate strategy system acts as a central control centre. In the mature and diversified KIE, the corporate centre and its large planning department play a strong role in controlling the different units of activity and directing their development. The corporate strategy system is focussed on composing a balanced selection of businesses, i.e. of business units or divisions. The strategic dialogue of the centre and the businesses is characterised by a strong quantitative focus and the strategy process of performance managent is especially strong and advanced.

Configuration at a glance: Centralised Composer	
External environment	The KIE is involved in various industries and is therefore impacted by multiple industry lifecycles. This creates a volatile external environment.
Internal environment	The KIE is active in a (broad) variety of business fields and industries. As a diversified enterprise these business interests are often (partly) unrelated.
CSS Function	The dominant CSS function is that of composing businesses, corporate development is considered to depend on the optimal selection of businesses.
CSS Processes	Together with strategy formation, performance management is the key CSS process, e.g. activities of corporate strategic control and gap analysis.
CSS Properties	The CSS focuses primarily on quantitative issues of the businesses, such as for example budgets, revenue targets, growth targets, etc.
	There is a fixed and relatively big planning department(s) that is responsible for conducting corporate planing activities. Their prime role lies in controlling the different units of activity and directing their development.
	There is strong top management commitment and intensive people involvement.

Table 7-9: Centralised Composer – configuration at a glance

The context and corporate strategy system of the Centralised Composer, as depicted at a glance in the table above, will be described in more detail below.

Context – Centralised Composer

The Centralised Composer is active in various sectors, in various fields of business. This leads to situation of *volatility* for the KIE. This is can be explained by the fact that at any point in time, the different businesses are facing different realities, for example they follow different economic cycles. The resulting overall pattern is one of volatility. Put the other way around, such volatility in one or more of the original businesses or it maturitisation are two of more possible drivers for the KIE to spread its entrepreneurial risk by being active in various fields of business.

It is likely that in the different markets the Centralised Composer it will face a different reality. Therefore, the KIE has to deal with *heterogeneous competitive forces*. Also, the KIE will have to face a wide *variety of stakeholders*. The Centralised Composer is typically a *high profile powerhouse* with a dominant position in the value chain. The impact of single competitors or stakeholders is therefore typically rather small.

One key characteristic of the Centralised Composer is that it is a *diversified enterprise*, i.e. a KIE operating in different areas of business, some of them unrelated. But the Centralised Composer context can also be found in multibusiness, multi-competencies firms, multicore conglomerates and unrelated diversified corporations. The Centralised Composer has reached the stage of *maturity*, at least in some of its businesses. This maturity and saturation of its original (core) businesses or in its original (core) competency fields can be one main driver to diversify into other fields. The Centralised Composer might focus on various value propositions in the different businesses it is in, but overall it will emphasise to optimise *system value*, i.e. providing highest possible value in terms of excellence of the entire enterprise system. The whole context of the Centralised Composer will prefer *incremental organic innovation* over radical organic innovation. For the more radical development steps, it is likely that the Composer is used to, and prefers anorganic moves (e.g. mergers). However, it is not unlikely that, for example, in some of the younger businesses the KIE might pursue more radical innovation. The Centralised Composer for sure has the resources to do so.

In comparison to for example the Synergising Coordinator, the collaboration between the various units of activity, which in this configuration typically are business units or business divisions, will not be so strong. A *centralised pyramid structrure* is much more likely, i.e. there UoA's are mainly steered by a strong dominance from the corporate centre. The Centralised Composer, being a diversified enterprise, is familiar with and might actively pursue *growth in distant businesses*, e.g. unrelated diversification. As a mature, typically large powerhouse, the KIE will have the necessary resources to act really proactive and has an *innovative adaptive strength*.

Corporate strategy system – Centralised Composer

In the Centralised Composer configuration the corporate strategy system is characterised by a strong (and relatively big) corporate centre that rigidly controls and steers the direction of development of the various businesses. As in this context many of the business specific decisions are typically left to the units directly dealing with them, the CSS focuses on analysing and optimising the portfolio of these businesses. In some way, this behaviour resembles that of a central investor with a strong focus on quantitative issues. There is an

orientation of the CSS to set (financially oriented) targets and monitoring their performance (making sure that the investments deliver return).

The format of the corporate strategy is that of a *detailed plan/report*, which covers for example overall corporate guidelines and objectives, the composition of the corporate portfolio, the breakdown of targets for the businesses and measures of performance, among others. The Centralised Composer has a mature and established corporate strategy system that typically follows the planning rhythm of a *rotating planning cycle*. In the CSS short, medium and long term views are considered (*time bridge*). Each of these time horizons is approached with a stronger *quantitative orientation*, e.g. long term growth perspectives for the various businesses, medium term ROI for strategic investments, short term profitability measures, etc. The dominant function of the CSS is the *composition of businesses*. Compared to other configurations, the Centralised Composer is the configuration with the widest variety of businesses and therefore for sustainable corporate development it is crucial to continuously try to create an optimal selection of businesses or areas of economic activity.

In order to do so, the Centralised Composer will require a fairly large and experienced corporate strategy system that can analyse the different dynamics of the (unrelated) businesses and look for creating a synergetic composition of the portfolio. This implies that not only decisions for expanding the portfolio, but also decisions for downsizing the portfolio are required. As so much is at stake, the CSS is planning-intensive and wil typically follow strongly *formalised planning procedures*. For example in order to create transparany and enable comparison among unrelated areas of activitiy, a formal procedure with standardised routines is required.

Another key characteristic of the Centralised Composer is the continuous and emphasised conduction of *performance management processes* - e.g. monitoring strategy realisation, corporate control and progress measurement – and its strong role in the corporate strategy system. In this way, the corporate centre agrees on quantitative targets for performance and the units are monitored for delivering on these targets. Also, the control over the corporate portfolio is a determining role in this context.

Apart from the top management, the corporate centre has one or more *central corporate planning department(s)*. Not only because of the typical large size of the entire corporation, but more because of the strong role of the corporate centre, a *planning department(s)* with a fixed staff that can conduct all the (quantitative) analysis, planning and control activities seems absolutely necessary. The planning department might be located in for example controlling or finance departments, but also an independent corporate strategy or corporate development department are typical (also in combination). For example, as seen in some of the cases, the controlling team can focus on performance management activities and the corporate development department on the corporate portfolio politics.

The role of the central planning unit(s) is primary that of *directing*, i.e. controlling the different units of activity and directing their development. Because of the size of the enterprise and because of the wide divergence of interests, the central corporate organs not necessarily go into all the details of the various business decisions, but they aim to control and direct the overall composition of the corporate portfolio, i.e. the corporate centre focuses on financial, quantitative returns aiming to control and optimise the portfolio of investments. In order to create a fair and transparent process, the corporate centre will aim to have a *controlled processes blueprint*, i.e. the corporate strategy processes are conducted in a predetermined manner and there is not a lot of room for changing the planning processes in case of unanticipated events. Although the units will have considerable freeroom to take strategic

decisions related to their business on their own, the key corporate strategic decision are taking *top down*, by the corporate centre.

The corporate planning unit(s) will typically directly report to and support the top management in preparing the key decisions, and thus have considerable influence. The Centralised Composer is thus highly 'planning-intensive'. A broad and *intense people involvement* is required. Also top management show *a strong commitment* and take full responsibility for the corporate strategy process. The people involved in the CSS display *highly trained* planning capabilities, e.g. seasoned planners in the planning departments are using latest management tools. Due to the large size and complexity of operations, the Centralised Composer is characterised by a *low flexible absorptive capacity* and a change climate of *delayed realisation*.

7.8   Configuration V – "Synergising Coordinator"

The fifth configuration is named 'Synergising Coordinator'. *'Synergising'* relates mainly to the focus of the corporate strategy system to create synergy between the various units of activity. Furthermore, the overall collaborative management style between units of activity and the external network of partners is oriented on achieving synergy. The term *'Coordinator'* relates both to the dominance of the coordinating UoA function of the corporate strategy system. Furthermore, the KIE is relies on coordination skills in the overall web of partners. This configuration is grounded on the combination of propositions 1e, 2e, 3e and 4e.

Introduction – Synergising Coordinator

The Synergising Coordinator is the typical context where the corporate strategy system provides a strategic dialogue with and among units. The dominant CSS function is that of coordinating the units of activity with the aim to achieve a collaborative, synergetic corporate development. The corporate centre will have a planning staff or team, which aim is to support and facilitate the units of activity and the corporate strategic dialogue. The Synergising Coordinator is characterised by a distributed commitment in strategic decision making.

Configuration at a glance: Synergising Coordinator	
External environment	The KIE is part of an intricate stakeholder web with a variety of strongly connected stakeholders. The Coordinator plays a strong role in this web.
Internal environment	Much emphasis is put on collaboration among the units of activity and the mature, multi-unit KIE aims to create synergy out of this collaboration. One of the goals pursued is to create (radical) innovation together.
CSS Function	The dominant CSS function is coordinting UoA, where sustainable corporate development is pursued through achieving high levels of synergy between the different areas of economic activity.
CSS Proceses	There is not one dominant corporate strategy process. The processes are focussed on generating synergy and innovation, through creative strategising.
CSS Properties	The corporate strategy system focuses primarily on qualitative and future looking issues. Creativity, also in strategising, is rewarded.
	The central planning unit might be a staff team or (smaller) department and their prime role lies in the support and facilitation of the units of activity.
	There is a distributed management commitment over the CSS. The corporate centre and UoA management work collaboratively on corporate strategy and development.

Table 7-10: Synergising Coordinator – configuration at a glance

The context and corporate strategy system of the Synergising Coordinator, as depicted at a glance in the table above, will be described in more detail below.

Context – Synergising Coordinator

The Synergising Coordinator is characterised as typical for mature, multi-business or multi-unit firms with strong, established but related units (on business level). It can be that the enterprise is involved in related businesses, but with a single or few related core(s). The external environmental change pattern is *dynamic* as this configuration is adapted to fast changes in the environment, might be even with disruptive forces. Such turbulencies could be for example created by distruptive technologies or a process of industry renewal.
The environment is mature, where a relatively small number of large competitors are faced with *highly competitive forces*. The Synergising Coordinator is typically a *high profile powerhouse* with a strong position in the value web, but has a strong reliance on the integation and collaboration with strategic partners in its *intricate stakeholder web*. The Synergising Coordinator will strategically focus on a limited number of core businesses and core competencies and aims to work together with its strategic partners in other related fields that are not considered to be core for the KIE.

The Synergising Coordinator is a large and *mature* KIE characterised by a *cooperative of units*, i.e. units of activity are strongly connected in guiding their activities. The units of activity can be for example business units, product/market groups or regional units and typically involve one or a few dominant core area(s) of economic activity or competencies. The collaborative relationships among units are a baseline for pursuing cross-business innovation. This context is very encouraging for *innovation*, i.e. out of the collaboration with internal and external partners, the KIE aims to anticipate change and act proactively. In this way, the Synergising Coordinator is focused on defending and extending its core business, but also proactively looking for more (radical) innovation in related businesses. Innovation is also pursued in external alliances and networks, as in this context the enterprise is aware of its own core competencies and looks for additional competencies for radical innovation, i.e. either as a *'technology disruptor'* where the enterprise is radically changing its technologically resources base or as a *'paradigm breaker'* where the KIE is radically innovating its knowledge base. The value proposition that is pursued is most likely that of *system value* as the collaboration and search for synergies naturally leads to a focus on the entire enterprise system.

Corporate strategy system – Synergising Coordinator

The Synergising Coordinator has a systematic and mature corporate strategy system but in this typical context the corporate strategy processes have more the character of a strategic dialogue between the corporate centre and the units of activity.
The corporate strategy mainly has the format of a *direction statement*, i.e. an explicit and broad statement on the overall course of action of the cooperative of units. But also more detailed explicit statements (plans or reports) can be expected, such as for example detailed technology studies or market scenario analysis. The Synergising Coordinator as a mature and established KIE has a *rotating planning cycle* installed, but will also conduct *strategic projects* for addressing certain particular strategic issues in more detail. These projects will typically involve people from various units of activity. The *longer term view* will be dominant in the corporate strategy discussions in the annual cycles. The KIE discusses about the

longer term alignment of the units of acitivity. This discussion can be expected to be mainly *strategic* in orientation, covering future looking issues, such as e.g. long term trends, visions and scenarios.

For ease of use and for creating transparency, the Synergising Coordinator will also have *formalised planning procedures* and systematic ways of conducting planning. However, there is considerable room for creativity and accordingly the processes blueprint is characterised by *contained creativity*, where there is built in room for dealing flexibly with unanticipated events.

In the KIE context with strongly collaborating and synergetic units of activity, the importance of coordinating these units and facilitating their collaborative development seems natural. The according primary function of the CSS is *coordinating UoA's*. The focus of the CSS in this context is very constructive and is all about being a facilitator of a strategic dialogue with the various units. In the view of the Synergising Coordinator, sustainable corporate development is pursued through achieving high levels of synergy between the different areas of economic activity. The creative formation of creative corporate strategies is an important process in this context.

The corporate centre will have a *central planning team* or department but is, compared to the Power Positioner and Centralised Composer configurations, smaller in size and influence. As this configuration is characterised by its collaborative strategy style, it is likely that there are equally influential planning teams in the various units of activity. The role of the central corporate planning department lies primarily in *facilitating* the collaboration between the various units. The corporate centre in this context is one important element in a team. The corporate top management takes decisions, but also leaves freeroom for the various units to make their own decisions. The main orientation of the central planning unit therefore is towards facilitating an optimal corporate development process, where units are encouraged to collaborate whenever synergies can be expected. The *mixed* (top down and bottom up) flow of decision making is a key characteristic of this configuration.

The cooperative of units are working together, expanding core competencies and looking for innovation collaboratively. Such cross business collaboration and innovation requires that both the corporate centre and management of the various units have a fair amount of involvement and commitment for the corporate strategy processes. In this way, *distributed commitment* – i.e. management is committed and the ownership over the processes is distributed – is demanded in order to truly be able to create synergies between the various units. Accordingly there is a *distributed involvement of people* in the CSS throughout the organisation. Due to the issues at stake (e.g. long term collaborative strategies, network structure, core competencies, cross business innovaton, etc.) *highly trained planning capabilities* are required.

7.9   Configuration VI – "Emergent Evolver"

The sixth and final configuration is named 'Emergent Evolver'. *'Emergent'* relates mainly to emergent style of strategy formation and realisation. Furthermore, emergence plays a key role in the overall corporate development pattern. The term *'Evolver'* relates to the dominance of the coping interactively function, which in its essence is about dealing with evolution in an interactive manner. This configuration is grounded on the combination of propositions 1f, 2f, 3f and 4f.

Introduction – Emergent Evolver

The Emergent Evolver is the typical context where the corporate strategy system is all about making small steps. Corporate strategy is formed as an emergent pattern of decisions. The corporate strategy system main function is to optimise the corporate evolutionary process by preparing for and dealing with unanticipated events. The corporate strategy processes follow the logic of self organisation and most of the main decisions are taken bottom up. The corporate centre, which is small and which has not much influence, provides a platform for (bilateral) communication among the units of activity.

Configuration at a glance: Emergent Evolver	
External environment	The configuration is well adapted to turbulent envinronments with often occurring, high impact external environment changes.
Internal environment	The KIE structure is a loose network with a characteristic lack of corporate centre control.
CSS Function	Coping interactively is the primary CSS function.
CSS Proceses	The main CSS process is that of emergent strategy realisation.
CSS Properties	The corporate strategy system evolves around certain events, e.g. annual strategy conferences, meetings or workshops.
	The corporate centre is the network management team and a small staff, which role lies in providing a platform for communication among the units of activity. The corporate strategy processes do not follow any scheme, apart from self organisation and the main strategic decisions are taken within the individual units of activity. The role of the corporate centre is thus rather modest.
	Management does not really take ownership of the corporate strategy processes and no one in the network really spends much time on it.

Table 7-11: Emergent Evolver – configuration at a glance

The context and corporate strategy system of the Emergent Evolver, as depicted at a glance in the table above, will be described in more detail below.

Context – Emergent Evolver

The Emergent Evolver is characterised by its *loose network* collaborative structure and a lack of corporate centre control. Examples can be found in flat or virtual networks with many different units of activity or networks that consist of strong and independent units. The Emergent Evolver is a flat network of innovation with highly responsive units / agents where paradigms of survival of the fittest make sense. This kind of KIE is a well adapted form for *turbulent environments*, i.e. environments with often occurring, high impact changes.
In turbulent environment, *heterogeneous competitive forces* can be expected. However, due to the scale of the individual units of activity the competitive forces confronting the network (in all its business endeavours) are of rather moderate intensity. With the network being active in various areas of economic activity, it needs to deal with a *variety of stakeholders*. In terms of value web position, the Emergent Evolver is typically a *neutral dominator*. The KIE can have a quite a dominant position, however due to the diffusion of activities and units the customers do not necessarily recognise the distinctiveness of the whole network.

The Emergent Evolver is characterised by its flat, complicated network structure that is able to naturally adapt to (turbulent) environmental changes. In a way, through the fast adaptation and emergent processes of development the KIE is in a phase of *constant renewal*. The dominant value proposition can vary, however the orientation on providing highest possible

value through technological and product leadership (*product value*) is typical. The combination of fast evolutionary processes and product value orientation can result in both *radical and incremental innovation* of products and services.

The network can involve a rather large number of units of activity. These units in themselves can be quite small and are typically active different, *related areas of business*. The collaborative structure of a loose network has a low level of collaboration between these different units of activity.   The adaptive strength of the knowledge-intensive network is extremely *opportunistic*. In order to survive, each of the units of activity needs to be very strong in reacting to external signals to change. As a result, a pattern of corporate development emerges that implies *growth or advancement in nearby businesses*. The Emergent Evolver might not be pursuing growth proactively, but advancement in related areas of activity are likely due to its strong focus on reacting opportunisitically to external impulses.

Corporate strategy system – Emergent Evolver

The Emergent Evolver is the configuration where corporate strategies are shaped emergently. The corporate strategy system is characterised by self organising, opportunistic processes. The role of the CSS and corporate centre should be seen more in terms of providing a platform for bilateral communication, for encouraging cross-border 'pollination' and establishing a positive infrastructure and culture for innovation.

The format of the corporate strategy is a common *mental model*. A detailed plan or statement is not likely, rather the strategy exists as a broad notion about the future vision of the KIE. The CSS is characterised by a *lack of formal procedures*. The CSS exists in the form of certain *'strategy' events*, e.g. annual strategy conferences, meetings or workshops, where strategic issues addressing the overall network are discussed. Although it is likely that strategy is not the core topic of the event.

Similar to the configuration of the Informal Shaper, much of the decisions might be taken informally and during day to day activities. The corporate strategy realy is the emergent pattern of these decisions. Accordingly, in terms of time horizon, the *short / medium term* orientation is predominant. Also, the orientation of this pattern of decisions is mainly *qualitative* in nature. The corporate strategy system of the Emergent Evolver involves the network leadership ('top management') and the senior managers of the units of activity. The corporate centre might involve a (small) adminstrative staff. The corporate strategy system is reflecting the management hierarchy and decision making structure of the network. In the context of the fast evolving networked KIE, the *coping interactively function* is dominant as it deals with optimising the corporate evolutionary process by preparing for and dealing with unanticipated events. Corporate development is a resulting process that depends on how well the KIE copes with the smaller and bigger shocks. The process of strategy realisation, which in this case is the pattern of decisions throughout the network, is the key process. The CSS is characterised by an (extreme) *bottom up mode of decision making* as the role of the corporate centre is very modest. Also the processes blueprint really is one of *self organisation*, i.e. the CSS processes do not follow any scheme, apart from self organisation.

The Emergent Evolver has a clear *lack of formal organisational arrangements* for the corporate strategy system and the role of the corporate centre can not be expected to be very strong. A planning department, team or committee is not very natural. Like the Informal Shaper and Catalysing Builder, the Emergent Evolver is characterised by a lower level of intensity of planning activities. However, as opposed to especially the Informal Shaper, the

CSS in this context can be expected to have a number of decision making mechanisms and institutions in place. The corporate centre has a role of network leadership and the prime role of the central unit lies in providing a platform for *communication* among the units of activity. When considering the decision making taking place in the KIE, there is a broadly *distributed involvement* of people throughout the network. The CSS process is an *orphan process*, i.e. management does not really take ownership of the corporate strategy processes and do not spend time on it. Accordingly, there is not much need for sophisticated planning capabilities, but decisions are rather based on *gut feeling* of KIE managers. The absorptive capacity that results is one of *strong absorptive flexibility*. Due to the open, self organising processes (e.g. intelligence), there is an openness to identify external signals, and due to the bottom up, decentralised mode of decision making the CSS is able to take necessary actions to deal with these signals in a flexible manner. This implies that changes get realised quickly (a *quick adaptation* change climate) as there is a general willingness to change in the networked KIE.

To summarise this chapter, we have now been able to conduct the second phase of the cross case analysis, where the configurations have been constructed. Using the functions, processes and properties that were determined in chapter 6, we have started this phase by uncovering the relationships between the CSS building blocks in the context of each of the twelve case studies. Grounded in the case syntheses, we have in a next step grouped the uncovered relationships and clustered them into a coherent set of propositions. The first of these propositions is especially important as it determines the typical contexts for corporate strategy systems in knowledge-intensive enterprises. We have identified six contexts, which are determined by different context properties. For example the first two are mainly determined by the phase of the corporate maturity (formation, cq. advancement), whereas the following four are determined by other properties. In this way, the proposed contexts include: an entrepreneurial KIE being formed; a fast growing, advancing KIE; a KIE dealing with competitive forces; a diversified, multibusiness KIE; a KIE with collaborating and synergetic units; and a loose networked KIE. Proposition two links the primary corporate strategy system function to each typical context. Proposition three and four establish the relations between the typical context, the CSS primary function with the role of the corporate centre and the characteristic form of the corporate strategy system.

By doing so, we have constructed the founding structure of our conceptual configurations. In the last paragraphs, we have described in more detail these configurations, which we have labelled: Informal Shaper (CSS as informal strategising); Catalysing Builder (CSS as catalyst for change); Power Positioner (CSS as compromise finding); Centralised Composer (CSS as central control centre); Synergising Coordinator (CSS as facilitator); and Emergent Evolver (CSS as self organising platform). In the description of the configurations, we have made use of all the context and system properties that were determined previously.

Grounded directly in the empirical evidence from the case studies, we were thus able to construct a number of conceptual configurations of corporate strategy systems in knowledge-intensive enterprises. With this hypothesis of our configurations in our hands, we have been able to formulate an answer to the overarching research question. In the following chapter we will discuss the so constructed configurations in light of our starting questions, but also, we will review these results in light of the starting assumption and other requirements we have placed on a new theory at the outset of this process.

8 Discussion and conclusions

In this concluding chapter we will discuss the main results in light of the research question (paragraph 8.1), reflect on the theoretical implications of these results (paragraph 8.2), formulate practical recommendations (paragraph 8.3), provide an overview of the methodological and conceptual limitations of this research (paragraph 8.4), and give an outlook on future research directions (paragraph 8.4). The chapter will end with concluding remarks (paragraph 8.5).

8.1 Discussion of results

The overarching aim of this explorative research is to provide insight into the nature of corporate strategy systems in knowledge-intensive enterprises. In this paragraph, the main findings of this study are briefly recaptured and reviewed in the light of the research questions, the orientation points for the new theory and the starting assumption that has been formulated at the start of the research process.

Main findings of this research

This research has been guided by the primary research question: *what are the distinctive properties of corporate strategy systems, and what configurations of these properties can be derived from studying knowledge-intensive enterprises?*
The object of study is the corporate strategy system (CSS) in knowledge-intensive enterprises (KIE). In the first phase of this research, the state of the art in theory has been analysed through an extensive literature study with some accompanying expert interviews.
As a result of the state of the art study, both concepts of CSS and KIE have been defined and better understood. Based on the definitions of Ackoff and Weggeman, *knowledge-intensive enterprises (KIE)* are defined as purposeful, living systems with mainly knowledge workers in the primary process or at least in the technical staff when this has a dominant influence on the functioning of the primary process. The overall category of knowledge-intensive enterprises is divided in three groups, namely that of 'talent-intensive', 'information-intensive' and 'technology-intensive' enterprises. Although KIE can be found in other sectors as well, the group of 'talent-intensive' enterprises has been represented in this research by case study companies from the professional services industry, 'information-intensive' enterprises by cases from the ICT industry and 'technology-intensive' enterprises by cases from the automotive industry. From the state of the art study, we have learned that although there is a wide variety of KIE, these three groups of knowledge-intensive enterprises share a number of typical qualities, such as the reliance on people and their problem solving skills.
A strategy can be either a deliberate plan or a non-deliberate pattern of decisions to reach a certain purpose. A corporate strategy (as opposed to for example functional or business strategy) is regarded as a strategy that determines corporate development. In line with this

understanding of strategy and corporate strategy, the *corporate strategy system (CSS)* is defined as the corporate sub system that realises corporate strategy, i.e. the corporate sub system that governs corporate development. The corporate strategy system is looked at in this research through a living system lens. In this view, the corporate strategy system is a subsystem (i.e. an organ) of the living KIE system that fulfils the function of forming and realising corporate strategies, i.e. the corporate organ that has as its main task to govern the corporate development process.

The state of the art study has made clear that there are various schools of strategy thought and a number of debates about the content, process and context of strategy take place in the academic domain. We learned that the academic field of strategy is fragmented. We have also seen observed that there are a number of synthesising, integrative streams of current literature. The configuration school of strategy research is considered as being one of such synthesising schools of thought. This research draws on previous studies of the configuration school in terms of research results and especially in terms of research methodology. The main conclusion from the state of the art is that none of these previous (configuration) studies can provide substantial enough answers to the guiding research question, i.e. the functioning of corporate strategy systems in the population of knowledge-intensive enterprises.

Therefore an explorative research approach has been chosen. The research roadmap has been designed according to methodological guidelines for constructing explorative multiple case studies [mainly based on Eisenhardt, 1989; Yin, 1994; Paauwe, 1989; and Weggeman, 2001]. The overarching objective of the followed research methodology has been to build theory in the form of conceptual configurations. The process of building configurations is grounded on the methodological guidelines of the configuration school [e.g. Miller & Friessen, 1984] and makes use of the scenario technique for data handling and analysis. This process has been structured in two main phases: first an investigation of the functions, processes and characteristic properties of corporate strategy systems and their contexts (in KIE); and secondly an exploration of the natural relationships between these context and system building blocks, the formulation of propositions about these relations, as well as a description of the resulting conceptual configurations.

In the first phase of configuration building the functions, proceses and distinctive properties of system and context have been determined. The first phase of the cross case analysis has identified the primary corporate strategy system functions: providing purpose; building resources; positioning competitively; composing businesses; coordinating units of activity; and coping interactively. Also, we showed that the corporate strategy system has the following main processes: corporate intelligence; strategy formation; strategy realisation; and performance management. Finally, the set of context and system properties is summarised in the following table (for a detailed description see appendix B).

The functions and proceses of the corporate strategy system are the answer to our first subquestion: *what functions and processes do corporate strategy systems fulfill in knowledge-intensive enterprises?* In the same way, the second research subquestion - *what distinctive properties characterise corporate strategy systems in knowledge-intensive enterprises?* - has been answered by the corporate strategy system properties. The external environment properties and internal environment properties are the answer to the research subquestion: *what distinctive properties characterise contexts of knowledge-intensive enterprises?*

	Properties
External environment	Environmental change pattern; Competitive complexity; Stakeholder integration; Value web position
Internal environment	Corporate maturity; Value proposition; Resources advancement; Units of activity diversity; Collaborative structure; Growth horizon; Adaptive strength
Corporate strategy system	Strategy format; Planning rhythm; Time horizon consistency; Corporate strategy orientation; Corporate planning formalization; Organisational integration; Role of corporate central planning unit; Processes blueprint; Decision making flow; People involvement; Management responsibility; Planning capability; Absorptive capacity; Change climate

Table 8-1: Research main findings – system and context properties

Many of these context and system properties have been modelled using a matrix format determining a number of possible property values. For example, the 'strategy format' property can have the values: mental model; direction statement and detailed plan. In a context example, the 'environmental change pattern' can be stable, dynamic, volatile and turbulent. These CSS functions, processes and properties together represent a conceptual framework through which corporate strategy systems can be analysed and through which knowledge-intensive enterprises can be distinguished from one another. As an example of how this classification works, in the appendix C, all case studies are 'classified' according to this scheme. In the appendix C, the property values for all cases are determined and displayed in a tabular form. This classification scheme analysis displays clearly distinctive patterns, distinguishing between the case studies. In other words, with the configuration building blocks (functions, processes and properties) we have a conceptual framework that helps us to classify corporate strategy practices of knowledge-intensive enterprises. It helps us to see where the similarities and where the differences lie between different knowledge-intensive enterprises.

The second phase of the configuration building process has used the building blocks and focussed on specifying the typical contexts and the description of the configurations of building blocks fitting within each typical context. The aim of this step was to answer the initial research subquestion: *what are the types of contexts of knowledge-intensive enterprises and what patterns of corporate strategy system functions, processes and properties can be identified in each of these typical contexts?* Grounded in the empirical data of the case studies, the result of this step has been the definition of the following typical contexts and according configurations of corporate strategy systems:

- Informal Shaper: entrepreneurial KIE being formed with CSS as informal strategising.
- Catalysing Builder: fast growing, advancing KIE with CSS as catalyst for change.
- Power Positioner: KIE dealing with competitive forces, CSS as compromise finding.
- Centralised Composer: diversified, multibusiness KIE with CSS as central control centre.
- Synergising Coordinator: KIE with collaborating and synergetic units, CSS as facilitator.
- Emergent Evolver: loose networked KIE with CSS as self organising platform.

In chapter 7 the properties belonging to each configuration have been described in detail. The schematic structure of the properties for each configuration is displayed in appendix D. These conceptual configurations are our suggested types of corporate strategy systems in knowledge-intensive enterprises. The set of conceptual configurations taken together represents the population of knowledge-intensive enterprises. In other words, these 'archetypes' provide a conceptual framework for understanding the population of knowledge-intensive enterprises and the nature of their corporate strategy systems.

The research results and the reference frame (orientation points)

Based on the comparison of the research question with the results of the state of the art study, a number of orientation points have been formulated at the start of the research process (see chapter 3). These orientation points were formulated as requirements for a 'theory of configurations of CSS in KIE' at the outset of the process. Now at the end of the research process, the developed 'theory' needs to be checked against these demands in order to see if the results of this research are in accordance with its original starting frame and intentions.

The first orientation point relates to the notion of 'dynamics' and states that *a theory on configurations of CSS in KIE should incorporate the dynamics of knowledge-intensive enterprise systems.* This requirement on the configurations is satisfied mainly through the existence of various properties that are in essence dynamic properties. Examples of dynamic properties are the context properties: environmental change pattern, corporate maturity, resources advancement and adaptive strength; as well as the CSS properties planning rhythm and change climate. These properties embody a phenomenon that is by its nature dynamic. Furthermore, the configurations concept as a whole is a dynamic concept, because through the framework of properties, the development of the corporate strategy system and the development of the knowledge-intensive enterprise can be 'measured' over time. This implies that a KIE and a CSS are considered to be dynamic (because living) systems and they will change their characteristic attributes over time. For example as the KIE moves through its corporate lifecycle it will go from formation to advancement to maturity to renewal / decline. A KIE can be expected to change its values for all its properties in all context and system dimensions throughout time, i.e. there are no eternally fixed characteristics of the KIE. Through the dynamic properties and a dynamic overall concept, the developed conceptual model accounts for the dynamics of the living KIE enterprise and CSS system.

The second orientation point relates to the notion of 'functional and process views' and states that *a theory on configurations of CSS in KIE should incorporate both functional and process views of corporate strategy systems.* This notion is reflected in the research results directly in the explored CSS 'functions' and 'processes'. The research has led to the proposition that there are a number of primary CSS *functions* in a KIE, namely providing purpose, building resources, positioning competitively, composing businesses, coordinating units of activity and coping interactively. In the same way, the CSS is characterised through a number of *processes* of corporate intelligence, strategy formation, strategy realisation and performance management. These two sets of building blocks can be considered as the two basic dimensions of any corporate strategy system in a KIE. The other properties of CSS determine the characteristic shape and form of the function and process dimension. The CSS properties can be considered meta- or design-properties of process and function. For example 'planning rhythm' and 'decision making flow' characterise aspects of the shape of the processes and 'people involvement' characterises the way the functions are filled with 'life'.
The CSS functions, processes and properties are considered in an integrated manner, meaning that they are all aspects of one living entity, i.e. the CSS. In this way, the developed conceptual model has the functional and process view integrated into its core.

The third orientation point relates to the notion of 'context' and states that *a theory on configurations of CSS in KIE should integrate the notion of context-sensitivity.* The

importance of context and the sensitivity of the system to its context is the dominant notion underlying both the configuration school and the living system lens (e.g. co-evolution). The main idea is that there is not one best CSS, but there is a different 'best' CSS for a different type of context. Context has been modelled through the dimensions of the internal and external environment of the knowledge-intensive enterprise. By using the classification scheme provided by the properties in these two dimensions, the case studies analysis has led to the proposition of typical contexts. The resulting hypothesis implies that the configuration of corporate strategy system will 'naturally' fit with the type of context. In other words, a certain type of CSS will also be found in combination with a certain type of context.

Moreover, from a methodological point of view, the choice for using case studies for developing theory underlines the importance of context sensitivity. The use of case studies is generally considered [e.g. Yin, 1994] to be the most effective research method when context is crucial for conceptualisation.

In this way, the developed conceptual model has context sensitivity covered in various ways. The sampling of case studies has ensured that research results are developed dedicated to the specific situation of the KIE population.

The fourth orientation point relates to the notion of 'synthesis' and states that *a theory on configurations of CSS in KIE should acknowledge the real-life complexity and multiple facets of enterprises.* The notion of acknowledging real-life complexity is most directly reflected in the classification scheme that is provided by the set of properties. Through the CSS functions, proceses and properties combined with the context properties, a truly multidimensional model is generated that allows for a detailed understanding of KIE regarding these multiple facets. In this way, a multiple variable construct is developed that should be able to 'measure' what are considered the most important properties of a complex corporate strategy system in practice. On the other hand, the real-life complexity of the overall population of KIE is broken down into a number of integrated and coherent constructs (the configurations), which explain in a comprehensive manner the relations between some complex phenomena.

Furthermore, the concept of synthesis is reflected in the results as well. The configuration school is considered [e.g. Volberda & Elfring, 2001] as one of a few promising research schools in providing synthesising concepts. The conceptual configurations of CSS in KIE, which have been developed in this research, provide a synthesis of various pieces of empirical evidence and inputs from theory. As has been described in the state of the art chapter, there are a number of current strategy schools and strategy debates in the academic domain. Building on the outcomes of these schools and debates, the resulting configuration hypothesis provides a synthesis for the specific domain of corporate strategy systems in the context of knowledge-intensive enterprises. In this way, the set of developed conceptual configurations is a model that synthesises on conflicting academic views and scattered pieces of theorectical knowledge but that still acknowledges the real life complexity through the underlying multiple variable construct.

The fifth and final orientation point relates to the notion of 'practice' and states that *a theory on configurations of CSS in KIE should provide a point of reference for practising strategists.* The role of the developed conceptual configurations in practice and the according recommendations for managers, planners and consultants is addressed in a following paragraph 'practical recommendations'.

The research results and the starting assumption

The assumption for this research is that the variety of corporate strategy system practices for the whole population of knowledge-intensive enterprises can in its essence be brought down to a limited number of fundamental configurations ('types', 'archetypes' or 'gestalts'). This assumption has been formulated at the beginning of this research (see chapter three) as follows: *we assume that the whole population of knowledge-intensive enterprises and their corporate strategy systems can be studied through constructing a rather small number of representative configurations.*

Inspired by the longer heritage of the configuration school, this research has resulted in a number of dedicated configurations of CSS in KIE. An amount of six representative configurations for the whole population of (probably millions of) KIE is of course a limited number. Therefore, one could argue that this assumption has been positively confirmed, as indeed it has been possible to develop a limited number of configurations that provide insight into CSS practice in KIE.

However, one can discuss to what extent the population of KIE and their CSS is explored and really better understood through the developed configurations. A conceptualisation of such a wide diversity of enterprises and according diversity of CSS practices is only possible through (over-)simplification. This is an often voiced critic of results coming from the configuration school. Even some of the most famous configurations in management literature, such as e.g. Mintzberg's organisational structures [1983], are criticised for being a too simple view on a complex phenomenon. On the other hand, it is through their simplicity and stylistic character that they provide such powerful images and big pictures of an otherwise complicated reality. Configurations as such are interesting for scholars, but managers can also relate to them when comparing their own particular contexts with the pros and cons of theoretically ideal types.

The configurations that have been developed in this research present a limited number of coherent types of corporate strategy systems that provide insight not only to academics active in the domain of corporate strategy or knowledge-intensive enterprises, but also to managers, strategic planners and consultants that are active in the messy practical reality of day to day life in the corporate strategy system. This insight into the CSS practice in KIE is provided not only by the configurations, but also by the set of distinguishing context and system properties and the way they are proposed to logically cohere together.

The robustness of the research findings

This section discusses the main research findings in relation to specific criteria of robustness for this type of studies (explorative, multiple cases for developing theory). According to Eisenhardt [1989] there are three criteria based on which the quality of emerging hypothesis should be assessed: emerging hypothesis as the result of a theory building case study research should be *good theory*, should be *empirically grounded* and should provide *new insights*.

During the research process various measures have been taken in order to optimise the results according to these criteria. Eisenhardt [1989] suggests taking the following measures in order to ensure an optimal result for theory building case study research: multiple investigators, quantitative and qualitative data, within case analysis, cross case analysis and triangulation of methods. These and other measures have been taken into account during the various phases of the research process all in order to increase construct validity, internal

validity, external validity and reliability of the developed conceptual configurations. These measures have been summarised in the chapter on the research methodology (see especially paragraph 4.5 'Quality of research').

We will address the three criteria of 'good theory', 'empirically grounded' and the provision of 'new insights' further in the next paragraph on 'theoretical implications'. In addition, the limitations to the robustness of the results will be addressed in the paragraph on 'limitations'.

8.2   Theoretical implications: configurations and strategic fit

This section discusses the theoretical implications of the research results and will do this based on three criteria that, according to proponents of the configuration school, should characterise conceptual configurations. According to Miller [1996], successful conceptual configurations have to possess at least the following three important features: they should be well informed by theory, they should resolve persistent debates and conflicts and the variables should cohere in ways that have important conceptual, evolutionary or normative implications.

CSS in KIE configurations and theory

The first criterion of good conceptual configurations implies that *"the review and classification of strategy types should have strong support from theories in strategic management. In other words, each type should have a long respectable history of academic work that has developed concepts and evidence."* [Elfring and Volberda, 2001]

The main theory that this research draws upon has been discussed in the state of the art chapter and was highlighted in chapter 6 (see also appendices E & F). Most importantly, this research is built upon strategy literature in general and corporate strategy literature in particular. As observed in the state of the art chapter, there are various ways to cluster the strategy literature, e.g. Mintzberg's strategy schools [1998] or de Wit & Meyer's strategy debates [1999].

The proposition made here is that the research results not only provide a conceptual model to understand KIE, but (in hindsight) can also serve as a framework for clustering the current corporate strategy literature. We suggest clustering the strategy literature in six main streams, where each stream consists of a dominant view on the role of a corporate strategy system. These views, which are based on the according CSS functions (see chapter 6), can be named the *purpose view*, the *resources view*, the *positioning view*, the *composition view*, the *coordination view* and the *evolution view*. The links of the functions and views, together with exact references to the authors and their studies, as well as more detailed concepts behind each view are listed in the appendix E.

View	Exemplary authors	Concepts
Purpose view	Gausemeier; Schwartz; Weick; Weggeman; Collins & Porras; Rowe; Bartlett & Ghoshal; Odomirok	Corporate foresight; Sense making; Developing collective ambition; Developing strategic intent; Defining mission statements; Envisioning; Establishing simple rules; Purpose giving
Resources view	Barney; Campbell; Itami; Prahalad & Hamel; Teece; Rummelt	Identifying strategic resources; Resources selection / Resources investments; Learning / Organic innovation; Dynamic capabilities; Core competencies

Positioning view	Markides; Porter; D'Aveni; Treacy & Wiersema; Hax & Wilde II	Dynamic positioning; Establishing a distinctive competitive position; Creating competitive configurations; Excelling in value disciplines; Choosing strategic options; Determining relations with stakeholders
Composition view	Henderson; Hedley; de Wit & Meyer; Gomez & Ganz; Beinhocker; Gertner & Rosenfield; Luehrman; Williamson	Corporate portfolio composition; Integration decisions; Diversification; Managing a portfolio of strategies; Managing real options
Coordination view	Myers; Normann & Ramirez; Eisenhardt & Brown; Moschowitz; Katzy; Camarinha-Matos; Skyrme	Designing (adaptive) organisational forms; Value constellations – designing interactive strategies; Patching; Collaboration; Establishing collaborative networks; Coevolving
Evolution view	Stacey; Mittleton-Kelly; Bonabeau & Meyer; Wall & Wall; Santa Fe Center for Emergent Strategies; Pascale	Self organization; Complex-evolving systems; Swarm intelligence; Grass roots strategy making; Emergent strategies; Revitalization - changing the ways of change

Table 8-2: CSS functions and a new clustering of corporate strategy literature

In the table above for each view a number of representative authors and related concepts are summarised. We have so constructed a logical classification of the current strategy literature according to our six main CSS functions.

CSS in KIE configurations and persistent debates

The second criterion for good conceptual configurations states that they should invoke contrasts that facilitate empirical progress, that is, they should resolve persistent debates and conflicts. The proposed clustering of the strategy field according to the CSS types and their primary function in an enterprise demonstrate again (see also chapter 2) the fragmentation in the academic domain and the diversity of opinions on the nature and functions of a corporate strategy system.

The main contribution of this research is the provision of a systemic view, building on each of these different (and sometimes opposing) streams in current literature, and their synthesis into a conceptual model dedicated to the specific context of knowledge-intensive enterprises. The synthesis provided claims that each of these views of thought relates to one particular CSS function in a KIE. This research has found the primary functions of a CSS in KIE to be the providing purpose function (related to the purpose view), the building resources function (related to the resources view), the positioning competitively function (related to the positioning view), the composing units of activity function (related to the composition view), the coordinating units of activity function (related to the coordination view) and the coping interactively function (related to the evolution view). The hypothesis that is generated through this research is that these functions of corporate strategy systems can be identified in any KIE context, but that one of these will be naturally dominant according to the specific context. This is supported by the empirical evidence, based on which six typical contexts for CSS in KIE have been constructed, being the Informal Shaper context (primacy of providing purpose function), the Catalysing Builder context (primacy of the building resources function), the Power Positioner context (primacy of the positioning function), the Centralised Composer context (primacy of the composition function), the Synergising Coordinator context (primacy of the coordination function) and the Emergent Evolver context (primacy of the coping interactively function). For each of these types of corporate strategy system, a number of

specific properties have been determined that naturally seems to go along with each of these contexts. For example a specific role of the corporate centre planning unit is found in combination with a dominance of a certain CSS function. Also the other core properties that characterise the shape and form of corporate strategy systems are found in particular configuration within each of these contexts.

In this way the developed typology provides a synthesis of the diversity of fragmented, and sometimes opposing, views in literature about corporate strategy systems. The typology represents a synthesis of these conflicting views specifically for the situation of knowledge-intensive enterprises.

CSS in KIE configurations and the coherence of variables

The third criterion for good conceptual configurations implies that the variables used to describe each type are shown to cohere in thematic and interesting ways, ways that have important conceptual, evolutionary or normative implications.

Apart from the developed typology, the underlying set of functions, processes and properties of system and context in itself represents an interesting and unique result, grounded in extensive empirical evidence. Both the set of building blocks (functions, processes and properties) and the typology provide insight into the population of knowledge-intensive enterprises. This is relevant because the role of corporate strategy systems in the specific population of knowledge-intensive enterprises is a relatively unexplored field of academic research. This seems only logical, as the broad media attention (especially popular business press) for the knowledge economy in general and the specific challenges of knowledge-intensive enterprises in particular have only boomed rather recently. Because of the early phase of academic research in the domain of the research question (CSS in KIE), an explorative research strategy was considered appropriate. As academic history has demonstrated, the search for configurations make sense in an early phase of a scientific lifecycle, as typologies are generally considered to be most valuable in contributing clarification on a high level about a broad domain and providing understanding about the studied population.

The conceptual configurations of CSS in KIE present a framework on how system and context properties cohere in interesting ways. The nature of the coherence is multidirectional, i.e. there is multidirectional causality. This is in line with configuration school proponents [e.g. Mintzberg, 1983; Miller and Friessen, 1984] who state that configurations are integrated systems where the cause and effect relations between the variables are not one of dependent-independent variables (no one of the parts is independent or given), but instead each part is integrated and dependent on all others. This implies that all building blocks in a configuration cohere together. The configuration hypothesis implies that this coherence is one of fit, i.e. the building blocks of system and context in one type 'belong together' in a natural and logical way. The proposed implication of the developed configurations is that all building blocks that are used to construct a certain configuration cohere in a way as described in the description of that particular configuration (see also appendix D with the schematic overview of the configurations).

However, when reflecting on the way the configurations have been constructed, a number of CSS parts and properties have played a special role. In a sense the structure of the typology has been constructed on a limited set of properties. These properties can be considered as 'core properties' of the configurations. When taken together with the propositions about

relationships among them, this defines a skeleton-like structure of the typology. The *core properties of the KIE context* are: environmental change pattern, competitive complexity, corporate maturity, units of activity diversity and collaborative structure. The *core properties of the CSS* are: planning horizon, corporate strategy orientation, corporate planning formalization, organisational integration, role of corporate centre planning unit, decision making flow, management responsibility, planning capability and the change climate. Thus, to be precise, five out of eleven context properties and nine out of fourteen CSS properties provide the core set of properties. Moreover, the core parts of the CSS, i.e. its functions and processes, play a central role in the structure of the typology.

The propositions that have been formulated in the previous chapter determine the relationships between the core context properties, the CSS functions and the core CSS properties. Proposition one determines the various typical contexts. Proposition two determines the dominance of a CSS function in relation to each typical context. Proposition three and four determine the relation between the CSS function and the core CSS properties for each typical context. These propositions in a way then represent the 'core relationships' underlying the typology structure. The propositions thus imply a strong coherence of these core parts and provide the configurations with their determining characteristic features.

In this way the structure of multidirectional relationships between the core building blocks of CSS and context have been captured by the propositions (as presented in the previous chapter). The propositions, which were the outcome of the cross case analysis, make use of a number of core properties to determine the contrasts between the different types of CSS and demonstrate the coherent clustering of these variables in fit with the KIE context.

Quality criteria of the configuration school and explorative research versus the data

In this section, in addition to the arguments provided above, we will discuss an additional robustness check of the research results. By doing so, we will address both the criteria of the configuration school (well informed by theory; resolve persistent debates; coherence of variables) and of explorative studies (good theory; empirically grounded; and new insights).

We have emphasised throughout the research process (see chapter 4 for an overview) the importance of grounding the results evidently in the empirical data. As the set of functions, processes and properties have been the result of the cross case analysis (see chapter 6), the proposed conceptual model is clearly grounded in the empirical evidence. Also the set of propositions (see chapter 7) are grounded in the empirical evidence.

However, as a final additional check we have measured in a simple manner [11] the coverage of the complete set of properties (including also non core properties) of the configurations and the twelve case studies with the result as highlighted in the following table. This simple check results in an average overlap index of around 75%, consisting of a CSS overlap index of over 82% and a context overlap index of almost 64%.

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[11] This check involves a simple 'measuring' methodology in order to determine the 'closeness' of case studies to the constructed configurations. The test bases on the configuration assumption that all companies will be closer to one configuration than to all the other five and will show high resemblance to it. The 'degree' of resemblance is tested through mapping all twelve cases to their closest configuration (their 'benchmark'). It would be expected that the general level of overlap is high. For this test we have constructed our own measure called <u>Overlap Index</u>, which is a measure to calculate the overlap between the case and the benchmark configuration. Calculation: Overlap Index = (number of properties identical / number of total properties) x 100%. The overlap index is calculated for the total set of properties, for the corporate strategy system properties and for the context properties. The higher the overlap index, the better the match between the case and the configuration. The higher the total match, the more realistic the configurations are, i.e. the better they are supported by the empirical evidence. Note that the underlying comparisons on each property can be found in the appendix C (property analysis of case studies).

Case	'Benchmark' Configuration	CSS - Overlap Index	Context - Overlap Index	Total - Overlap Index
CreaStudio	Informal Shaper	81,3%	72,7%	77,8%
InnoService	Informal Shaper	93,8%	72,7%	85,2%
AdaptIT.com	Catalysing Builder	87,5%	54,5%	74,1%
VERYSoft	Catalysing Builder	56,3%	63,6%	59,3%
SolveTix	Informal Shaper	87,5%	54,5%	74,1%
Linux	Emergent Evolver	81,3%	54,5%	74,1%
TelEquip	Power Positioner	81,3%	72,7%	77,8%
MachOne	Informal Shaper	100,0%	63,6%	85,2%
CoolSystem	Synergising Coordinator	75,0%	54,5%	66,7%
InnoMobile	Synergising Coordinator	87,5%	90,9%	88,9%
DriveSupply	Centralised Composer	81,3%	45,5%	66,7%
GlobalCar	Centralised Composer	75,0%	63,6%	70,4%
Overall (average)		*82,3%*	*63,6%*	*74,7%*

Table 8-3: Comparing cases versus configurations – measuring overlap index

Although this is a rough measure, it seems to indicate that the configurations are fundamental and cover natural and logical patterns of relationship. In other words, not only the relations between the functions and core properties (as formulated in the set of propositions) can be considered supported by the empirical evidence, but there also are strong arguments for the additional relations proposed in the configurations.

In summary, by reflecting on the criteria that characterise good conceptual configurations and good theory building research, a number of implications of the developed CSS typology in KIE have been determined. First of all, we have argued that the developed model helps to cluster the current corporate strategy literature that it is build upon. Secondly, we demonstrated how the research results provide a synthesis of fragmented views in CSS literature specifically for the context of knowledge-intensive enterprises. Thirdly, we argued that the configurations of CSS in KIE represent a number of relationships between context and system variables that are relevant not only for theory but also for practice. The typology is specifically dedicated to the population of knowledge-intensive enterprises and represents new insights about their corporate strategy system practices. Finally, we have demonstrated (though a simple measure) the overlap of the configurations with the twelve case studies to be high. Although, this measure is simple and statistically not representative, it does provide an appreciation of the theoretical implications of the configurations. We can now proceed and discuss the implications of this theory for practice.

8.3   Practical recommendations

"Corporate success and longevity are fundamentally interwoven, in a way that, nowadays, is qualitatively different from the relationship between success and longevity in the economic environment of five decades ago."

- Arie de Geus, The Living Company, 1997

This section reflects on the research results and deduces a number of recommendations for practice. After a reflection of the configuration hypothesis and corporate development, this section discusses two main approaches of using the results in corporate strategy practice.

The configuration hypothesis is in principle a hypothesis about success. The hypothesis implies that the clusters of (core) building blocks that have been grouped together into configurations are issues that naturally belong together, i.e. in each configuration there is strategic fit between context and system. This can be translated into the assumption that a corporate strategy system that is configured according to the traits of its context will be more effective, i.e. will be more successful than a system that is not configured in line with its context. As the corporate strategy system governs the crucial processes of corporate development (see the definition of CSS), this could even be extended to the assumption that when a CSS is designed according to the typology it will positively influence the overall success of the enterprise. In theory it is argued by some that *"the advantage of a high degree of configuration may, therefore, include synergy, clarity of direction and co-ordination, difficulty of imitation, distinctive competence, commitment, speed and economy."* [Elfring and Volberda, 2001]

However, in the practical reality of the business world it might not exactly be as simple to 'cash in' on the configurations. This has to do not only with the configurations, but more with the inherent challenges of CSS and the link between corporate development and success. In a study on corporate longevity, de Geus found that *"No living species suffers from such a discrepancy between its maximum life expectancy and the average span it realises. And few other types of institution have the abysmal record of the corporation."* [de Geus, 1997] In other words, for a modern business enterprise it is extremely difficult to survive, let alone sustain competitive advantage over time. One explanation is referred to as the 'red queen effect' [Kaufman, 1995; Beinhocker, 1997], which is a phenomenon exhibited by evolutionary systems after that character's (Red Queen) remark to Alice in Wonderland *"It takes all the running you can do to keep in the same place."* In nature, the red queen effect is at work when a predator learns to run faster; its prey responds by acquiring better camouflage, the predator then develops a better sense of smell, the prey starts to climb trees, and so on. Evidence suggests that the business world resembles a red queen race. A study [Beinhocker, 1997] of the performance of more than 400 companies over 30 years reveals that firms find it difficult to maintain higher performance levels than their competitors for more than about five years at a time. Linking this back to the configurations, it implies that configurations are not successful cooking recipes that will last eternally. But moreover, as the external and internal context of a KIE is in a continuous process of change, the corporate strategy system will have to change accordingly in order to remain effective. As was discussed in paragraph 8.1 (related to the 'dynamics' of the configuration concept), the developed CSS typology for KIE is basically a dynamic concept and the scheme of properties provides a continuous frame of reference for these change processes.

Taking these reflections into account, there are a number of practical recommendations that can be deducted from this research. We will discuss two main approaches for using conceptual configurations in practice. One approach is to use them as a sensitising concept, i.e. for assessing a KIE. Another approach is to use configurations as a design concept, i.e. for changing a KIE.

Configurations of CSS in KIE as sensitising concept & assessment approach

One approach to apply the results of this research is to use the configurations as a sensitising concept. This implies using the configurations as a way to raise awareness about CSS issues and as a concept for analysing and understanding the actual situation of a knowledge-intensive enterprise.

The main groups of involved parties in the modern corporate strategy practice are typically top management, strategic planners and (internal and external) management consultants. Also employees can be involved with various levels of commitment. Each of these (and other) stakeholders can have different specific goals and interests for analysing and assessing the KIE and its CSS, e.g. as part of a quality audit, a benchmarking process, a SWOT analysis, as part of planning process improvement, for organisational development, among many others. On a generic level, however, a procedure for conducting such an assessment based on the configurations could be quite similar. One example of a procedure for conducting an assessment of the KIE and its CSS is depicted in the table below and described as follows.

Step	Objective	Procedure
0. Awareness	Create awareness on space of possibilities of a CSS in a KIE	• Presentation & discussion of configurations / context and CSS variables
1. Context map	Create a map of KIE context based on context variables	• Analysis of KIE context (internal and external) regarding each variable • Determine context values on each scale
2. CSS map	Create a map of the CSS based on CSS variables	• Analysis of CSS regarding each variable • Determine CSS values on each scale
3. Configuration benchmark	Compare the current state of the corporate strategy system with the features of the 'closest' CSS type	• Determine the typical context that is closest to the KIE context • Compare the CSS values of the KIE with the values of the 'benchmark' type • Determine the biggest gaps between typology and KIE (possibly quantified)

Table 8-4: Exemplary approach for a KIE assessment based on configurations

Before starting an assessment process, there needs to be an awareness among people involved about a particular problem, challenge or opportunity that the KIE faces. The developed configurations and the underlying set of properties present a conceptual frame with a broad overview over the population of KIE and the possibilities of corporate strategy systems. In a preparatory stage of *awareness* it is easy to imagine short or longer presentations or workshops about the CSS types and the role they can play in KIE development. Also presentations or workshops focussing on a number of CSS types or a selected set of underlying properties can help e.g. a consultant to make a more customised presentation. Take the example of a KIE in a transition from a fast growing to a more mature enterprise. In this case a consultant may go in and present the three 'mature' environment configurations of the Power Positioner, Centralised Composer and Synergising Coordinator. After this general overview a workshop could be started for example focussing on 'how to organise the CSS more systematically' based on the room of possibilities related to the CSS 'organisational' properties, such as e.g. corporate planning formalization, organisational integration, role of CCP unit, processes blueprint and decision making flow. These presentations and discussions can be enhanced with some relevant case examples or methods.

The awareness step results in an appreciation of the situation and a particular objective or scope of the further assessment procedure.

The first step of the actual assessment relates to a *mapping of the KIE context.* In an easiest format such an assessment takes the classification scheme of the properties and their

attributes and tries to work out (e.g. through desk top research, interviews or workshops) the actual situation of the company regarding each internal and external environment property. The attributes could be considered as values on a scale (see chapter 6 and the matrix grids for each property) and for each specific context property the value is determined. For example, the corporate maturity of a KIE is 'advancement', the change pattern is 'turbulent', etc. etc. In a more advanced approach, additional analysis tools can be added for assessing various internal and external environment aspects more deeply, e.g. market analysis, value chain analysis, EFQM, organisational structure diagnosis, etc. etc. Also, a detailed assessment of specific context properties can be interesting, e.g. zooming in on only the external environment.

This step results in a 'score' or in a more detailed report of the KIE on each of the eleven context property scales. The score could be simply a determination of the context properties (for example using the chapter 6 matrix grids). A report would include more extensive analysis on the internal and external environment of the KIE.

The second step relates to the *mapping of the corporate strategy system*. The same approach as for context mapping can be applied. Apart from the CSS properties as 'assessment scales', an analysis of the CSS functions and processes should be added. For example questions can be asked like: How are the CSS functions fulfilled? What is the main CSS function? How are the CSS processes conducted?

This step results in a 'score' or in a more detailed report of the KIE on each of the CSS property scales and determines the way how functions and processes are fulfilled.

The third and final step of this exemplary assessment approach consists of a *configuration benchmark*. Based on the context map, the KIE is compared to the typical contexts of the typology. Making use of the configuration hypothesis that claims that any KIE will resemble one of these contexts more than the other, it will be easy to determine the closest typical context, i.e. the context of the typology that resembles the specific KIE the most. For example a KIE can be 'diagnosed' to be most resemblant to a Catalysing Builder. Than its corporate strategy system map (outcome of step 2 of this assessment) is compared to the archetypical CSS of the Catalysing Builder configuration. Especially on those aspects where there are clear differences between the KIE and the archetype, opportunities can be identified for detailed investigation and analysis. A simple version of the configuration benchmark would be to simply compare all properties of the enterprise with those of the closest type (like we did for the case studies, see appendix C). But, more detailed and extensive analysis can be very enriching. Especially a detailed gap analysis makes sense, in order to better understand the reasons behind the differences between configuration and case.

The results of this step are a (detailed) comparison of the specific characteristics of the KIE with the 'ideal' benchmark of its closest theoretical type. This result can be used for example as input for a change management process (see next section).

In this way, the configurations and the underlying scheme of properties can be used as a simple or more advanced assessment approach in order to diagnose the corporate strategy system of any KIE. Apart from such a dedicated approach for CSS assessment, the various aspects of the research results (incl. configurations, properties, functions, underlying concepts, cases, etc.) can also be used in other more general scenarios, such as e.g. in a general KIE analysis (not focussing solely on the CSS).

Configurations of CSS in KIE as design concept & strategic change approach

A second main approach of using the configurations in corporate strategy practice is to use it as a design concept. This implies that the configurations become a normative concept that can be used to guide a change management process of the KIE. A selected configuration can be used as a target state of the KIE and the underlying set of properties provides the main 'levers' for change. Like in the assessment approach, various people can be involved and various objectives can be followed in this approach. One example of a generic approach for configuration-based transformation, which is grounded in common change management procedures [see e.g. Riches, Kemp, et al., 2003], is depicted in the table below and described as follows.

Step	Objective	Procedure
0. Configuration gap assessment	*See above*	• *See above*
1. Explore improvement opportunities	Identify opportunities for improving the CSS effectiveness or efficiency	• Based on the benchmark and gap analysis, determine where the KIE has potential for improvement • Cluster and describe ideas into coherent transformation opportunities
2. Evaluate opportunities	Evaluate transformation opportunities of the KIE	• Evaluate identified opportunities for improvement, based on predefined criteria • Prioritise the most promising opportunities and select according to resources
3. Plan transformation activities	Plan the execution of the positively evaluated and selected transformation opportunities	• Plan the activities required to exploit the opportunities for improvement, using project or programme planning tools
4. Execute transformation activities	Execute the selected and planned transformation activities	• Execute transformation activities

Table 8-5: Exemplary approach for a CSS design based on configurations

Following the assessment (as described in the previous section) of gaps between the configuration and the actual KIE situation, *opportunities for transformation* can be identified. When following a planned change approach, change management or transformation processes typically require an understanding of the current situation (the IST state) as well as a set of objectives for the future (the SOLL state). In a process of configuration-based transformation, it is one possibility to select one of the configurations as the target state. Another possibility would be to have a more open determination of transformation objectives, determined for example on property level. An overall objective of any such transformation process should be to improve the CSS adaptive fit with the KIE internal and external environment. After a collection and clustering of the identified transformation opportunities, the result of this first step is a set of possible opportunities for improving the fit between the CSS and the current and future state of the KIE.

In a second step of the transformation process, the *opportunities are evaluated* against a set of criteria. Examples of criteria for evaluating transformation opportunities can include [based on Riches, Kemp et al., 2003]: Feasibility (Is the transformation possible and practical within the existing organisation?); Timescale (How long is the initiative going to take from planning to full implementation and benefit realisation?); Dependencies (What dependencies emerge

from the initiatives? For instance, an ICT tool for corporate intelligence is probably dependent on appropriate infrastructure being in place); Business case (What are the top-line projected benefits and costs of the initiative?); Ease and Impact (How much disruption will the initiative cause? How much impact will the initiative have on the main objective of transformation?). These or other criteria can act as a filter to evaluate projects for transformation and can be used to assess and rank initiatives that arise from the earlier gap analysis.
This step results in a prioritized list of transformation initiatives / projects.

In a next step the selected initiatives are *planned for realisation*. And the fourth and final step of this process is to accordingly *execute these transformation activities*. These two last steps are rather generic change management steps and will typically be based on common project or programme management skills. The result of these two final steps is the realisation of a more effective and efficient CSS adapted to a current and envisioned future state of the KIE.

As was highlighted in the state of the art chapter, there are different views on how strategic change can be realised in an enterprise, i.e. either revolutionary or evolutionary. The change management approach described here is a planned change approach and normally involves quite revolutionary changes or shocks in the organisation. It would be an interesting subject for further study to understand if this change approach can be applied to all configurations, or that for example in an Emergent Evolver context, the evolutionary change is more likely to bring results.
Anyway, the approaches above should mainly exemplify the possibilities opened up by the configurations for the corporate strategy practice. Following a generic approach, as described above, the configurations can be used as a design concept serving as (or inspiring) a normative target state of the CSS in a KIE. Such a configuration-based transformation process can lead to a better fitting CSS.

Additional practical recommendations and lessons learned

Apart from the two above described main approaches of using the research results in corporate strategy practice, there are a number of additional considerations and recommendations that could be based on this research. These have to do with the use of strategic planning instruments and practical lessons learned based on the cases.
The strategic planning processes are identified as corporate intelligence, strategy formation, strategy realisation and performance management. For conducting each of these processes a variety of instruments can be used. Based on observations from the case studies and some additional practical studies on strategic planning tools, the appendix F provides an overview of instruments that can be used in each of these four processes. For example scenario analysis and Delphi techniques could be used for corporate intelligence and the Balanced Scorecard for performance management.
However, as an outcome of this research the corporate strategy system is observed to consist not only of four main processes, but moreover is mainly determined by the corporate development functions (providing purpose, building resources, etc.) that the CSS fulfills. These two dimensions taken together are a starting point for a practical discussion about a CSS in a KIE. In more mature and systematic CSS in practice, but also in strategy textbooks and consulting services it is very common to discuss about CSS based on the process dimension alone. However, when adding the function dimension to this discussion a much more modular and flexible planning approach can be devised when making clever use of the processes and functions. For example, when following the proposition that not all functions

have a similar level of importance at a given time for a KIE, it will lead to more effectiveness and efficiency when the strategic planning process will focus only (or mainly) on that particular function that has primacy at that point in time for the KIE. For example in a KIE where positioning competitively is the primary function, a different planning toolset (e.g. competitive analysis, stakeholder analysis, etc.) can be applied than in a KIE where providing purpose function is dominant (e.g. vision statement, sense making, etc.). This should help to improve the planning process, because it implies that it is allright to not have to discuss all functional issues every year in the same level of detail, but moreover give each functional issue as much room on the agenda depending on the environmental situation. In this way, a much more modular approach to designing the CSS should lead to a significantly improved system. This relates to a general (consulting) tendency towards more modular strategic planning approaches, as exemplified by tools of Grove Consulting [12] and StrategyGarden [13].

In summary, the configurations have various practical implications. This section has described two possible approaches to use the configurations in strategy practice. One approach (configuration-based awareness and assessment) is to use the CSS types as a sensitising concept and assessment tool for KIE or for external partners (e.g. consultants, analysts) assessing KIE. The other approach (configuration-based transformation) is to use it as a normative concept guiding a change management process of the KIE CSS.

Now that we have an understanding of the possible impact of the configurations both on theory (see previous paragraph) and on practice, we turn now to discuss about the limitations that are contained in the developed hypothesis.

8.4   Limitations and future research

"… how much of the complexity we supposedly see around us is real complexity, and how much is simply that we're confused by things because we just don't have the right theories, or approaches to understand things, which may in fact be a lot simpler than we think?" – Henry Mintzberg [ICCS, 1998]

This section discusses some methodological and conceptual limitations of this research and provides a number of possible future research directions.

Methodological limitations

In terms of methodological limitations of this research, one limitation is inherent to the nature of this research. As in any explorative research, the end result of this thesis is in itself a hypothesis with a set of according propositions, i.e. the start of a theory on CSS in KIE.

The proposed conceptual model seems to represent a potential platform for a sustained theory building process. The main reason is that with a relatively comprehensive typology well founded statements can be made about a broad range of corporate strategy aspects and a broad diversity of organisations (KIE). Recent history of academic developments [e.g. Feuer & Chaharbaghi, 1997] demonstrates that typologies have an especially usefull role in the starting phase of an academic lifecycle in a new field of knowledge (as is the case here for the domain of CSS in KIE). To use case studies in order to build theory is by now widely accepted and tested as a scientific method in strategy research. As has been discussed in the chapter of the research methodology, there is a good base of exemplary studies that

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[12] Grove [www.grove.com] is a consultancy focussed on facilitating strategic change processes with modular and visual tools.
[13] Strategy Garden [www.strategy-garden.net] is an open source community with modular and visual planning tools for fast growing enterprises.

have followed this approach and much is known about the rigor of methodology. Especially Yin [1994], van Aken [1995] and Eisenhardt [1989] provide clear orientation on how to conduct theory building with case studies.

In this research we have taken all of these available methodological guidelines into consideration. However, there are no clear guidelines available on the *appropriate amount of case studies* to be used in a study to develop configurations from cases. For sure, the amount of 12 case studies is not a statistically representative sample of knowledge-intensive enterprises. As this is not a hypothesis-testing cycle, this is not required. But, still, how many are appropriate? Would the results we have obtained look different, if we would have used 6 or 24 cases? Moreover, the case studies provide some geographical coverage in Europe with companies from 5 countries. However, would the result look the same if we would have included Asian or American cases as well?

Apart from the geographical and 'statistical' limitations, the theory is also limited in its comparison with other populations. We have not investigated in detail the differences of KIE corporate strategy system practices, when compared to non-KIE enterprises or e.g. not for profit organisations. Therefore, even though the hypothesis we have developed might be appropriate for the targeted population (KIE), the research results could be even more robust when combined with some comparative analysis.

All these three areas of methodological limitations could also be turned into interesting areas of further research (see later section).

Conceptual limitations

The main conceptual limitations of this research relate to the complexity of the studied domain. *Knowledge-intensive enterprises* are defined as enterprises where knowledge workers are the dominant employee group. The sample of cases has been chosen to replicate the three theoretical categories of KIE, i.e. information-intensive, talent-intensive and technology-intensive enterprises. These three categories have been represented by cases from three industries. However, apart from these industries, KIE can be expected in various other industries as well, such as e.g. pharmaceutical, biotechnology, chemicals, processing and consumer electronics. It is an interesting issue for further research to validate the typology not only against a statistically larger sample, but also one covering more industries.

With the advanced progression towards a knowledge economy, it can be expected that new knowledge-intensive branches of industry will emerge and that knowledge-intensive enterprises can also be found in other industries, even in older mature industries. This implies first of all that the population of knowledge-intensive enterprise is large and secondly that the population is growing and borders with other categories of enterprises might become more and more blurred. Or put differently, the definition of the KIE population with its three subcategories will increasingly become more of a continuum than a discrete scale.

The second aspect of complexity-related conceptual limitations lies in the *number of properties*. For a research covering such a wide and complex domain, the question can always be raised about the appropriate level of abstraction. This research has found eleven properties to characterise the context of a KIE and fourteen properties to characterise the corporate strategy system of the KIE. Could the typology also have been constructed with fewer properties, or are important properties left out? Note that this limitation is also related to the methodological limitation of the number of case studies. Although the aim has been to

reach theoretical saturation, it remains open if a different level of saturation can be reached through e.g. doubling the amount of case studies.

The case studies have been selected to cover a theoretically defined portfolio of KIE. After the individual and cross case analysis, the resultant set of properties has been identified as the most distinguishing features of KIE. If the typology could have been constructed with fewer properties is maybe an even more interesting question. And actually this has already been the case. The set of in total 25 properties has been the result of a 'horizontal' cross case analysis, where the main research issue was to identify those properties that have a distinguishing nature between the various KIE. The second phase of the cross case analysis has been done more 'vertically' and have made clear that – although all properties are good categorisation criteria – not all properties have been necessary for determining the configuration structure. The skeleton structure of the configuration is namely based on the CSS functions and a core set of context and CSS properties. Still, the other (non-core) properties have played a very usefull role in the final detailed description of the configurations, as they added additional 'colour' to the types. Thus there has indeed been a distinction in core and non-core properties. The core properties are those that are covered in the explicit proposition statements and thus determine the typology framework.

To summarise, we see two main areas of conceptual limitation. The first is related to the diversity of the KIE population. The second relates to the number of properties. Both of these limitations can provide interesting leads also for further research in this field, e.g. a research with case studies in other knowledge-intensive industries (e.g. pharmaceutical or biotech).

Directions for further research and development

This section describes three possible directions of future research in the field of corporate strategy systems in knowledge-intensive enterprises.

The first future research direction relates to a *large scale testing of the developed configuration hypothesis*. Overlooking a typical academic lifecycle, after a phase of explorative research that generates hypothesis it is natural to follow up with a research phase of hypothesis-testing. In this field it would imply to conduct a research with a large and statistically representative sample out of the population of KIE with the aim to 'proof' the existence of the propositions of relationships. Similar to the simple check of the case studies of this research with the configurations (see previous section and appendix C) a hypothesis-testing cycle could quantitatively and statistically measure the overlap between configurations and the whole population of knowledge-intensive enterprises. Such research could also be conducted with the goal to discover if there might be a seventh or eight representative 'natural cluster of properties'. For example, as the developer of probably the most influential configurations in the configuration school, Mintzberg has concluded - after progress of time - that there are more than his five originally proposed organisational structure types [see Mintzberg, 1999]. The hypothesis-testing research could even be extended to address the question of CSS types in other (non- or less-knowledge-intensive) populations of firms. It is possible that the uncovered patterns of attributes are so fundamental and natural that they can also be found in a population of enterprises even broader than KIE. Alternatively, a research would be interesting addressing the main differences between CSS in KIE and CSS in other types of enterprises and organisations, e.g. in other industries, non-profit organisations, in other geographical regions or in 'exotic organisational forms'.

The second future research direction relates to more *focussed research zooming in on more specific issues* related to corporate strategy systems in knowledge-intensive enterprises. The conceptual configurations at a high level cover a very broad and complex field of study. Such high level of abstraction has made an exploration of a large domain possible. Future research can now zoom in on much more focussed issues within this overall domain. Hints in this direction can be derived from the whole underlying body of proposed new 'theory', e.g. the CSS functions, processes and the set of properties. Each of these issues could be investigated in much more detail with a more focussed research question. Examples of more focussed follow up studies are: the relation between corporate maturity and CSS maturity; mechanisms of CSS in a fast growth context (i.e. Catalysing Builder context); the impact of corporate strategy systems on the functioning of organisations (e.g. increasing or decreasing, in what circumstances?); the relation between collaborative structure and CSS processes; generalisation of the configurations to other national cultures; personality of the CEO, c.q. characters of the top management team, versus the choice for a CSS configuration; among many others. Such studies could be conducted as hypothesis-generating cycles, or if there is appropriate theory available then as hypothesis-testing cycles, or in combination. Also each of the individual propositions of relation could be a potential subject of further (testing oriented) study.

The third future research direction is actually more a direction of applied research or development (i.e. the D in R&*D*). The previous paragraph in this chapter on practical recommendations has demonstrated through two exemplary generic approaches that it is conceivable to develop planning instruments and consulting packages based on the learnings from this research. It would be very interesting applied research, for example in an action research or living lab setting together with case study companies, to develop practical CSS toolkits configured specifically to the needs of each typical KIE. With the conceptual configurations as a starting point, development work can for example lead to planning methodologies and CSS instruments for each of the six typical CSS scenarios.

Although many more streams of future research and development can be conceived, three particularly promising streams have been reviewed here. The first aims to statistically support the configuration hypothesis. The second aims to zoom in on particular properties and relationships within the overall scope opened by the high level concept. The third is applied research with the aim to develop dedicated practical solutions for each CSS type. These three streams should already provide a glimpse of the potential and impact that the configurations of CSS in KIE can have on future research in this domain.

8.5   Concluding remarks

With this research, especially through the various case studies and state of the art study, we have made clear that both the academic domain and the practice of corporate strategy systems in knowledge-intensive enterprises are highly dynamic, diverse and interesting.
The objectives for this research have been to obtain an increased insight in the nature, behaviour and diversity of knowledge-intensive enterprises, especially with regard to their state of corporate strategy system practice. The diversity of corporate strategy systems in knowledge-intensive enterprises is conceptually represented by the wide variety of possible combinations of classification criteria (i.e. functions, processes and properties) regarding e.g. organisational arrangements, orientation and time horizon, change climate, people

involvement, among many others. The unique set of explored functions, processes and properties thus provides a conceptual framework for understanding different corporate strategy systems and their contexts in knowledge-intensive enterprises.

Abstracting from this wide diversity and complexity of aspects, this research has developed a typology consisting of a small number of clearly differentiated and consistent patterns of natural fit between these building blocks of corporate strategy systems and their contexts: the Informal Shaper, the Catalysing Builder, the Power Positioner, the Centralised Composer, the Synergising Coordinator and the Emergent Evolver. In each of these configurations, the corporate strategy system fulfils a different primary function, i.e. plays a different role in the KIE development process, and accordingly behaves differently. The synthesis (of empirical and theoretical evidence) that we have so created enables a systemic and abstract overview of the whole population of knowledge-intensive enterprises. We have discovered a conceptual frame that allows a knowledge-intensive enterprise to be compared with one of the six ideal archetypes.

The typology displays potential theoretical implications mainly in the synthesis for knowledge-intensive enterprises that is provided on the current diverging views of thought in corporate strategy systems. The relevance for consulting and management practice is illustrated by two potential fields of application, namely as an assessment and as a transformation approach. The scope of future research and development that is opened up by this explorative research is interesting and relevant. The conceptual configurations of corporate strategy systems in knowledge-intensive enterprises thus seem to fulfil the criteria of the configuration school and for explorative research, and could over time prove to be one cornerstone for theory building in this domain.

If our conceptual configurations will inspire further research and development, then they have contributed to the scientific and empirical progress in this emerging discipline and we have achieved our main goal of this PhD thesis: to provide insight into the corporate strategy system practice of knowledge-intensive enterprises.

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Appendices

Appendix A: Survey research instrument

Stuttgart, December 2002

Regarding: **Survey 'Environment & Strategy'**

Dear Madam/Sir,

This Survey is part of the research for a PhD thesis on *"Corporate Strategy in the Knowledge-Based Economy: towards strategy configurations of knowledge-based enterprises".*

As such, this survey is the first of three steps for coming to understand how your organisation deals with environmental turbulence and what role your corporate strategy system plays in this. The second step will consist of a number of individual semi-structured interviews. The third and last step consists of an open feedback round and discussion. The main idea behind this survey is to investigate the different aspects of the external environment, the different aspects of crafting strategies and choosing strategic direction, as well as how these interact and influence each other. Therefore the main aim of this survey is to find out:

How your enterprise copes with turbulence in the external environment (e.g. market, technology, customer demand) and what role corporate strategy plays in this?

More in detail, the objectives of this survey are the following:

- For all involved to learn and understand where your company is currently positioned and where it intends to be in the future.

- To systematically determine the complexity, dynamics and uncertainty of the environments from current to future within your business.

- To get an in-depth picture in the way you choose and keep strategic direction.

- To provide you and all involved a detailed insight into the strategic fit of your organisation, its strategic direction and your environment, showing according future potentials in the relevant fields.

- To support the construction of a small number of typical successful strategy typologies, which you can use as a point of reference.

For any questions or comments feel free to contact me, or for returning this survey see below.

Sincerely,

Jeroen Kemp

Address: Paulusstrasse 5; 70197 Stuttgart, Germany

E-mail: Jeroen.Kemp@iao.fhg.de

NOTE: The data obtained from this survey will be treated with the proper respect, the provided answers will be used anonymously!

Introduction to this survey

In a recent survey of the World Economy (The Economist, Sept. 28 2002), it was stated that *"…several factors that might make the economic cycle more rather than less volatile over the coming years ...after a period of relative calm, the business cycle is likely to become bumpier again."*. Similar observations can be found in the business & management press, where the aspects of turbulence and volatility for knowledge-based business are discussed to a high degree. Certainly corporate strategy plays a key role in dealing with environmental turbulence, as like for example Richard D'Aveni said *"… the central focus of strategy is on understanding the relationship between an environment's turbulence and the company's choice of strategy"* (D'Aveni, 1999).

With a specific focus on knowledge-based enterprises, one can assume that there are different aspects which influence how successful an enterprise is in choosing corporate strategies in alignment with the environment. Accordingly, the level of performance of the corporate strategy system (as a subsystem or organ of the organisation) is believed to be dependent on a number of variables. These variables are at least related to how turbulent the external environment is perceived to be and how well fitted the corporate strategy system is in dealing with this perceived level of turbulence.

This survey will investigate these issues and therefore consists of the following four major parts:

- **Fact Sheet**:
    …within this part, general facts and figures about your company will be asked. A number of given answers are divided into "currently" and "in 3 – 5 years". Please answer the current state as well as where you see the answer for the company in the future.

- **Corporate Environment**:
    …all about external factors, that might have an impact on your enterprise. The areas of general environments, market, customers, technology, suppliers, competitors and partnerships will be observed. Every section consists of two questions: "how strong and how often do you expect changes within…?" Please answer with regards to your current situation as well as towards a time horizon of the next 2 – 5 years and 5 – 10 years.

- **Corporate Strategy System**:
    …all about the choice of strategies as well as the ways of choosing strategies. Different dimensions of the corporate strategy system will be investigated: Purpose, Posture, Position, Process and Progress. Please answer, from a current perspective as well as for a future perspective (if you believe this aspect will change in the foreseeable future).

- **Critical Success Factors**:
    …first step for linking environmental turbulence with the choice of strategies as well as the ways of choosing strategies. Diverse critical success factors are given, where you have to give your importance as well as the degree of effort your organisation brings to comply to each of these. Please answer from the current situation as well as from a future point of view (in 3 – 5 years).

Company fact sheet

In what year was your company founded?

Year: [   ]

How would you define the business sector you are in?

Sector: [   ]

What has been the NUMBER OF EMPLOYEES within the last 5 years?

	1998	1999	2000	2001	2002*
Number of employees:					

 * estimated

What was the average annual growth rate of NUMBER OF EMPLOYEES before 1998 (from the very beginning of your company)?

Average annual growth rate (before 1998): [   ]

What has been the annual growth rate [%] of your TURNOVER within the last 5 years?

	1998	1999	2000	2001	2002*
Growth rate [%]					

 * estimated

What was the average annual growth rate [%] of your TURNOVER before 1998 (from the very beginning of your company)?

Average annual growth rate [%]: [   ]

What has been the annual PROFITABILITY (ratio between profit and turnover) of your company within the last 5 years?

	1998	1999	2000	2001	2002**
Profitability* [%]					

* Profitability = (profit / turnover) x 100

** estimated

What was the AVERAGE ANNUAL PROFITABILITY [%] of your company before 1998 (from the very beginning of your company)?

Average annual profitability [%]:

How would you describe best the MATURITY STATE of your COMPANY at the moment?

	Please tick
Formation stage	❏
Growth stage	❏
Maturity stage	❏
Decline stage	❏

Please tick (also in graphic)!

Maturity level

formation   growth   maturity   decline

Time t
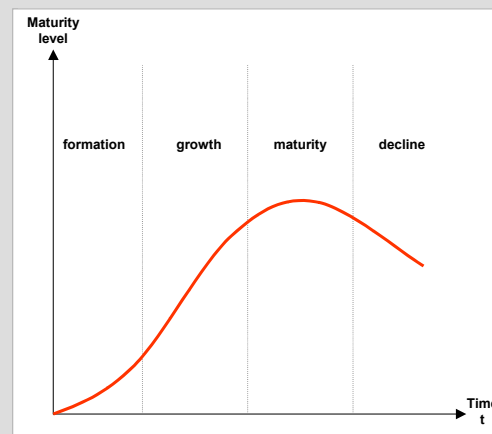
Which of the following stages characterises best the maturity of your major MARKET / INDUSTRY?

	currently	in 3 – 5 years
Development Stage: …a market / industry that is young and not too much developed.	❏	❏
Growth stage: …competition is dominating this stage. Turnover is increasing a lot…	❏	❏
Maturity stage: …market / industry can be seen as stable and mature…	❏	❏
Decline stage: …decreasing turnover, companies are leaving this market / industry…	❏	❏

Please tick!

**Which of the following characteristics describes best
the DOMINANT CUSTOMER BEHAVIOUR ?**

	currently	in 3 – 5 years
Pioneers	❏	❏
Early adopters	❏	❏
Early followers	❏	❏
Late followers	❏	❏
Laggards	❏	❏

Please tick!

**Which of the following characteristics describes best the
state of your FUNDAMENTAL TECHNOLOGICAL LANDSCAPE?**

	currently	in 3 – 5 years
Cutting edge: …that level of technology development that is ahead of even the most sophisticated applications in the market place	❏	❏
State of the art: …adaptation of developed cutting-edge technologies to market needs and applications	❏	❏
Advanced: …the advent of the larger market, customers are much less sophisticated, but seek all benefits from state of the art applications	❏	❏
Mainstream: …technological thrust moves from product development and application research into production research	❏	❏
Mature: …technology becomes a platform on which other technologies will be based	❏	❏
Decline: …other technologies displace the declined technology	❏	❏

Please tick ONE!

Which of the following characteristics best describes the dominant type of RELATIONSHIP WITH YOUR SUPPLIERS?

	currently	in 3 – 5 years
Transactions: …transaction between two economic actors; all activity is conducted as a set of discrete market-based transactions	❏	❏
Repeated transactions: …repeated, frequent purchase of products/services	❏	❏
Long-term relationships: …relatively long-term contractual commitments between buyer-seller	❏	❏
Buyer–seller partnerships: …system of strategic partnership with one or a small number of vendors	❏	❏
Strategic alliance: …intended to move each of the partners toward the achievement of some long-term strategic goal	❏	❏
Network organisations: …complex, multifaceted organisation structure that results from multiple strategic alliances, possibly combined with other forms of collaboration	❏	❏
Vertical integration	❏	❏

Please tick ONE!

How would you rate the COMPETITION WITHIN YOUR INDUSTRY?

	currently	in 3 – 5 years
Low competition	❏	❏
Mid competition	❏	❏
High competition	❏	❏

Please tick!

How would you rate the general INTENSITY of COLLABORATION with PARTNERS WITHIN YOUR INDUSTRY?

	currently	in 3 – 5 years
Low intensity	❏	❏
Medium intensity	❏	❏
High intensity	❏	❏

Please tick!

Perception of the corporate environment

This part will ask about different aspects of your business environment. The main idea is to identify how your organisation perceives turbulence in direct and general corporate environment.

General environment

Society

How high do you expect the direct IMPACT of changes in *SOCIETY* to be on your business activities? (Examples: 11th of September 2001; Mad-cow disease)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in *SOCIETY* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Economy

How high do you expect the direct IMPACT of changes in *ECONOMY* to be on your business activities? (Examples: Wall street crash; Enron; etc.)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in *ECONOMY* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Ecology

How high do you expect the direct IMPACT of changes in *ECOLOGY* to be on your business activities? (Examples: Earth quake; el Niño, etc.)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in *ECOLOGY* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Politics

How high do you expect the direct IMPACT of changes in *POLITICS* to be on your business activities? (Examples: New government; new laws, etc.)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in *POLITICS* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Culture

How high do you expect the direct IMPACT of changes in *CULTURE* to be on your business activities? (Examples: Individualism; consumption mentality, etc.)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in *CULTURE* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Markets

How high do you expect the direct IMPACT of changes in your *MARKETS* to be on your business activities? (Examples: from seller to buyer market, etc.)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in your *MARKETS* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Customers

How high do you expect the direct IMPACT of changes in your *CUSTOMERS* to be on your business activities? (Examples: customer preferences; customer loyalty, etc.)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in your *CUSTOMERS* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Technology

How high do you expect the direct IMPACT of changes in *TECHNOLOGY* to be on your business activities? (Examples: nano technology; alternative energy, etc.)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in *TECHNOLOGY* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Suppliers

How high do you expect the direct IMPACT of changes in *SUPPLIERS* to be on your business activities? (Examples: shared product development; supplier consolidation, etc.)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in *SUPPLIERS* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Competitors

How high do you expect the direct IMPACT of changes in your *COMPETITIORS* to be on your business activities? (Examples: market shake-out; mergers & acquisitions, etc.)

	< 2 years	2 – 5 years	5 – 10 years
very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
very high	❏	❏	❏

Please tick!

How often do you expect changes in your *COMPETITIORS* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Partnerships

How high do you expect the direct IMPACT of changes in your *PARTNERSHIPS* to be on your business activities? (Examples: R&D alliance; coopetition, etc.)

	< 2 years	2 – 5 years	5 – 10 years
Very low	❏	❏	❏
low	❏	❏	❏
high	❏	❏	❏
Very high	❏	❏	❏

Please tick!

How often do you expect changes in your *PARTNERSHIPS* to have a direct IMPACT on your business activities?

	< 2 years	2 – 5 years	5 – 10 years
very rare	❏	❏	❏
rare	❏	❏	❏
often	❏	❏	❏
very often	❏	❏	❏

Please tick!

Complexity and predfictability of variables

Overlooking all the external variables listed above (General Environment, Markets, Customers, Technology, Suppliers, Competitors and Partnerships), the following three questions address the complete set as a whole.

To what extent is the Impact of the Variables on your business activities HETEROGENUOUS (impact of one variable is DIFFERENT than the impact of other variables)?

❏	❏	❏	❏
Very low	**Low**	**High**	**Very high**

Please tick!

To what extent is the Impact of the Variables on your business activities INTERCONNECTED (impact of one variable is DIRECTLY RELATED to impact of other variables)?

❏	❏	❏	❏
Very low	**Low**	**High**	**Very high**

Please tick!

To what extent is the Impact of the Variables on your business activities UNPREDICTABLE (consequences of the impact of variables can not be forecasted or foreseen)?

❏	❏	❏	❏
Very low	**Low**	**High**	**Very high**

Please tick!

Corporate strategy system

Within this part, questions about different variables of your corporate strategy system will be asked. The *corporate strategy system*, by using a nautical metaphor, can be seen as the set of deliberate or non-deliberate processes that guides an organisation in determining its course, sail out and steer its course and track and possibly correct its course. Like the way a ship, when at sea, might for that cause use e.g. a sextant, an organisation relies on its corporate strategy system.

The corporate strategy system is believed to be determined by the following five main dimensions:

- **PURPOSE**: how does the collective ambition guide your organisation?

- **POSTURE**: how do underlying opinions influence the corporate strategy system?

- **POSITION**: how does your organisation take a position on certain critical decisions?

- **PROCESS**: how do strategic initiatives lead to action inside your organisation?

- **PROGRESS**: how does your organisation intend to develop and/or grow?

The following consists of different questions highlighting diverse variables within these five dimensions.

Purpose

Intent
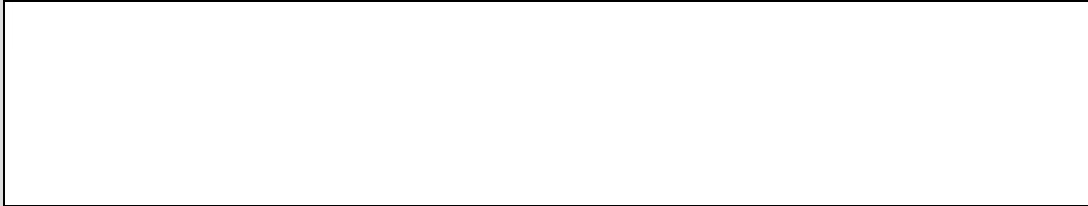
What is the primary intent of your organisation?

	currently	in future
Increase Shareholder Value: … shareholder interest should be given the first priority	❏	❏
Increase Stakeholder Value: … organisation exists for the interest of all stakeholders	❏	❏
Other ………………	❏	❏

Please tick ONE!

Mission, Vision, Objectives
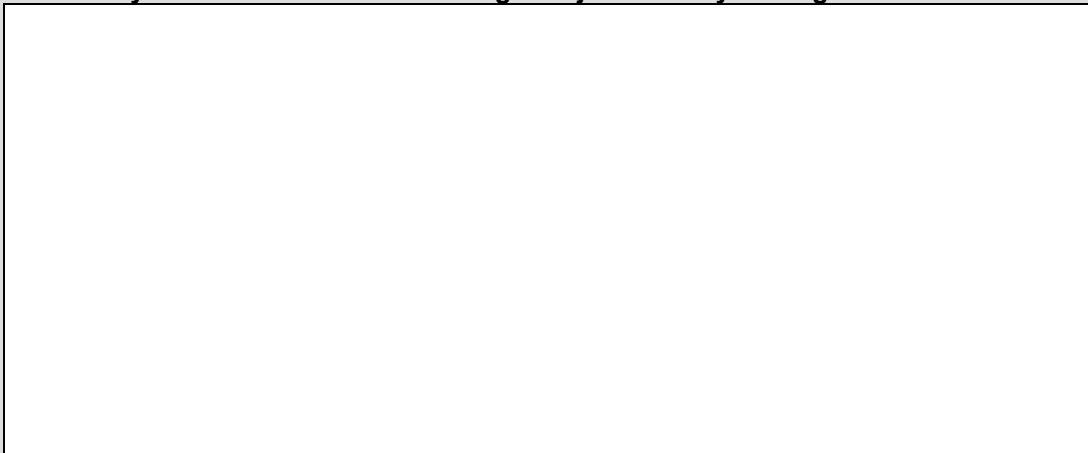
How would you describe the Mission of your Organisation?

How would you describe the Vision of your Organisation?

How would you describe the main Strategic Objectives of your Organisation?

Posture

Strategic orientation

Keeping in mind that *Anticipative* can be seen as the ability to act in a proactive manner (highly innovative, first to market) in your business, e.g. through technological leadership and *Responsive* can be seen as the ability to react on external signals very quickly and act in an appropriate manner in a short time frame (e.g. meeting new customer demands).

To what extent is your Corporate Strategy oriented to be *anticipative* (to external pulses)?

❏	❏	❏	❏
Very low	**Low**	**High**	**Very high**

Please tick ONE!

To what extent is your Corporate Strategy oriented to be *responsive* (to external pulses)?

❏	❏	❏	❏
Very low	**Low**	**High**	**Very high**

Please tick ONE!

Which of the following best characterises your organisations' orientation towards the future?

	currently	in future
Active creation of the future: … playing a leading role in determining the competition rules in the sector for example through determining standards or actively generating needs	❏	❏
Adaptation to the future: … speed, agility and flexibility for the recognition and utilization of chances in existing markets	❏	❏
Reserve the „right to play": … sufficient investments to preserve the competitiveness without an early determination of further activities	❏	❏

Please tick ONE!

Strategic behaviour

Which of the following best characterises the dominant pattern of strategic behaviour of your organisation?

	currently	in future
Prospector: … risk-seeking decision-makers who like to undertake high stakes business ventures; actively and aggressively search for business opportunities to improve performance	❏	❏
Analyser: … do not aggressively seek risky ventures, but at the same time do not avoid risks; try to rationally balance risks and returns by following and improving technological advancements (possibly made by others)	❏	❏
Defender: … have well-established businesses and seek to protect and nurture these; risk averse and invest only in proven long-term prospects	❏	❏
Reactor: … react to environmental pressures; reacting defensively to industry problems	❏	❏

Please tick ONE!

Position

Scope

In your organisation, corporate strategy includes ...

	currently	in future
Selection of the competitive environment	❏	❏
Definition of goals and the most desirable competitive position	❏	❏
Selection of projects and business opportunities	❏	❏
Resource allocation	❏	❏
Selection of desirable level of risk	❏	❏
Definition of growth and size targets	❏	❏
Organisational structure and responsibilities	❏	❏
Internal alignment of activities and alignment with other business units	❏	❏
Other ………………………..	❏	❏

Please tick ALL RELEVANT!

Competitive advantage

How does your organisation position itself against your competitors?

	currently	in future
Cost Leadership: … broad lower cost advantage	❏	❏
Differentiation: … broad differentiation advantage	❏	❏
Cost Focus: … narrow (niche) cost advantage	❏	❏
Differentiation Focus: … narrow (niche) differentiation advantage	❏	❏

Please tick ONE!

Value creation

How does your organisation primarily aim to create value and outperform competition?

	currently	in future
Speed: … capability to respond quickly to customer or market demands and to incorporate new ideas and technologies quickly into new products	❏	❏
Consistency: … capability to produce a product that unfailingly satisfies customers' expectations	❏	❏
Acuity: … capability to see the competitive environment clearly and thus to anticipate and respond to customers' evolving needs and wants	❏	❏
Agility: … capability to adapt simultaneously to many different business environments	❏	❏
Innovativeness: … capability to generate new ideas and to combine existing elements to create new sources of value	❏	❏

Please tick ALL RELEVANT!

On a scale from 1 to 5 please give the importance for adding to the value your company creates, for each of the following

	currently	in future
Fast innovation process	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Quality of products and services	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Cost and flexibility	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Service	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Variety of products and services	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Global supply	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Brand	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑

Please tick!

Critical capabilities

On a scale from 1 to 5 please give the strategic importance for each Capability

	currently	in future
Product Innovation Capability	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Manufacturing Knowhow	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Sales Networks	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Brand Names	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Marketing Expertise	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Supplier Relationship	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Logistics Expertise	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
General Management Expertise	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑
Financial Resources	1❑ 2❑ 3❑ 4❑ 5❑	1❑ 2❑ 3❑ 4❑ 5❑

Please tick!

Process

Strategic analysis

Which of the following best describes the way your organisation strategically learns about the environment?

	currently	in future
Intelligence: … formal search in the environment for information and intelligence likely to invoke strategic changes	❏	❏
Informal Scanning: … informal search for changes and opportunities in the environment	❏	❏
Experience: …knowledge acquisition through direct experience, either formal or informal	❏	❏
Experiment: …formal organisational experiments aimed at adaptation	❏	❏

Please tick ALL RELEVANT!

Strategy formation

Which of the following characteristics best describes the way strategic initiatives are formed and shaped inside your organisation?

	currently	in future
Planning: … fully conscious and controlled thought process	❏	❏
Entrepreneurial: … semi-conscious process	❏	❏
Learning by Experience: …evolutionary process of repetitive nature	❏	❏

Please tick ONE!

Which of the following best characterises the way in which strategic decisions are made inside your organisation?

	currently	in future
Autocratic: … a single manager is the key decision maker	❏	❏
Bureaucratic: … well defined and documented stepwise procedures for handling all decisions	❏	❏
Adaptive: …decisions flow from previously made decisions; formal plans are a starting point for decision making	❏	❏
Political: …several (groups of) key decision makers make decisions	❏	❏

Please tick ONE !

Strategy implementation

Which of the following models best describes the way strategic initiatives lead to action (strategy implementation) inside your organisation?

	currently	in future
Commander: … centrally formulated strategy implemented top down	❏	❏
Change: … focus on the transformation of organisational structure and systems	❏	❏
Collaborative: … involving management to get commitment from the start	❏	❏
Cultural: … implement strategy through the infusion of a corporate culture	❏	❏
Crescive: … drawing on managers' inclination to develop opportunities in day-to-day management	❏	❏

Please tick ONE!

Timeframe and Form

How often do you formally define a corporate strategy?

	currently	in future
Continuously	❏	❏
Once every year	❏	❏
Once every 2 years	❏	❏
Once every 3 years	❏	❏
Longer	❏	❏

Please tick!

In what form are corporate strategies defined?

	currently	in future
Report / Plan	❏	❏
Mental Model	❏	❏
General Direction	❏	❏
Other ………………………..	❏	❏

Please tick!

Roles and responsibilities

Who is involved within your organisation in corporate strategy formation?

	currently	in future
Specialists	❏	❏
Top management	❏	❏
All employees	❏	❏
Other …………….	❏	❏

Please tick!

Who has ownership over the strategy formation process?

	currently	in future
Corporate level	❏	❏
Parent business unit	❏	❏
Business sub-unit	❏	❏
New business unit	❏	❏

Please tick!

Progress

Growth

The preferred Direction for Corporate Growth is through…		
	currently	**in future**
Market Penetration: … from current business by gaining market share and increasing market penetration	❏	❏
Globalisation: … in the same business, but in a different geographic location	❏	❏
Vertical Integration: … either backward or forward vertical integration	❏	❏
Related Diversification: … in another related business	❏	❏
Unrelated Diversification: …in a different, unrelated business	❏	❏

Please tick ALL RELEVANT!

The preferred Mode of Corporate Growth is …		
	currently	**in future**
Organic / Internal	❏	❏
Strategic Alliances	❏	❏
Mergers & Acquisitions	❏	❏

Please tick ONE !

Development

The dominant Innovative Capacity can be characterised as …		
	currently	**in future**
Continuous Improvement: … incremental innovation of products, services or processes	❏	❏
Business Process Improvement: … incremental innovation of the corporate system	❏	❏
Non-linear Innovation: … radical innovation of products, services or processes	❏	❏
Business Concept Innovation: … radical innovation of the corporate system	❏	❏

Please tick ONE!

Critical success factors of the corporate strategy system

The following section is about specific critical success factors for coping with turbulence in the business environment: 25 are listed in the table below.
- Please give the importance of each of the factors in consideration of today (currently) and within the next 3 – 5 years (future).
- Please mention to what degree your organisation makes an effort (currently and in future) to comply to this success factors.

| | Importance | | | | | | | | Degree of effort to comply | | | | | | | |
| | currently | | | | In 3 – 5 years | | | | currently | | | | In 3 – 5 years | | | |
Critical success factor	not important	rather not important	rather important	important	not important	rather not important	rather important	important	Not at all	to some extent	rather extensive	fully	Not at all	to some extent	rather extensive	fully
To have consistency of short, medium and long term planning																
To pick up weak signals and to act on leading indicators (e.g. early warning)																
To orient all business activities towards a common vision / strategic intent																
To promote a leadership and culture aimed at growth																
To continuously open up new strategic growth opportunities																
To continuously capitalise on innovations (e.g. new products and services)																
To respond quickly to new market opportunities																
To be flexible in networking and partnering with diverse, appropriate organisations																

Critical success factor	Importance								Degree of effort to comply							
	currently				In 3 – 5 years				currently				In 3 – 5 years			
	not important	rather not important	rather important	important	not important	rather not important	rather important	important	Not at all	to some extent	rather extensive	fully	Not at all	to some extent	rather extensive	fully
To generally enhance the use of collaborative networks (e.g. strategic alliances)																
To promote and 'live' conservative financial management																
To make effective and efficient use of all resources (e.g. tangible & intangible)																
To increase mobility and ability of people to adapt in unprecedented situations																
To continuously lever and promote human talent and creativity																
To work on an innovative corporate culture and to break down barriers to change																
To improve the organization's competitiveness through cost advantages																
To move very fast in order to anticipate customers demands																
To develop strategies continuously																
To develop a strategy focused on core competencies																
To develop different possible scenarios of the future																

Critical success factor	Importance								Degree of effort to comply							
	currently				In 3 – 5 years				currently				In 3 – 5 years			
	not important	rather not important	rather important	important	not important	rather not important	rather important	important	Not at all	to some extent	rather extensive	fully	Not at all	to some extent	rather extensive	fully
To define the served markets broadly and not narrowly																
To develop competitive advantage over competitors																
To invest in exploiting and upgrading the firm's resource base																
To no longer separate strategy formulation from strategy implementation																
To not rely on a strategy which was successful in the past																
To have an influence on the bargaining power in the industry																

Appendix B: Detailed overview functions, processes and properties

Functions, Processes and Properties				Description
CSS Functions	**Building resources**			Selecting, developing and leveraging strategic resources.
	Providing purpose			Providing the KIE with a meaning and a global sense of direction.
	Composing businesses			Composing a balanced selection of businesses.
	Positioning competitively			Determining a sustainable competitive position of the enterprise in its environment.
	Coordinating units of activity			Coordinating the units of activity (and their development).
	Coping interactively			Optimising the corporate evolutionary process by preparing for and dealing with unanticipated events.
CSS Processes	**Corporate intelligence**			Identifying, gathering, analysing, preparing and communicating information that is required for strategy formation (related to the CSS functions).
	Strategy formation			Evaluating options, setting priorities, taking decisions and integrating them into a coherent corporate strategy.
	Strategy realisation			Communicating strategy, preparing its execution, setting up strategic (change) initiatives and leading action for development of the enterprise.
	Performance management			Keeping track of strategy realisation, measuring progress (against targets) and possibly correcting strategy.
CSS Principles	**CSS01**	**Strategy format**	01A	Mental model	The corporate strategy is a common mental model; is not made explicit and exists as a broad notion.
			01B	Direction statement	The corporate strategy is an explicit but broad statement on the course of action, for example in the shape of a set of corporate targets, principles or guidelines.
			01C	Detailed plan/report	The corporate strategy is made explicit and is detailed to a large extent, for example in the shape of reports.
	CSS02	**Planning rhythm**	02A	Ad hoc	Planning is done ad hoc, i.e. in crisis type meetings.
			02B	Strategic projects	Planning activities are conducted in the form of projects.
			02C	Rotating planning cycle	Planing follows a rotating planning cycle; most common is the annual planning cycle.
			02D	Planning events	Planning occurs periodically but centers around certain events, e.g. annual strategy conferences, meetings or workshops.
	CSS03	**Time horizon consistency**	03A	Short / medium term orientation	Short to medium term view is predominant: 1 -4 years.
			03B	Long term orientation	Longer term view is dominant: 5 or more years.
			03C	Time bridge	Both short, medium and long term views are considered; consistency is emphasized.
	CSS04	**Corporate strategy orientation**	04A	Strategic / Qualitative	Corporate strategy system focuses primarily on qualitative and future looking issues, such as e.g. long term trends, visions, scenarios. Creativity.
			04B	Operative / Quantitative	Corporate strategy system focuses primarily on quantitative and day to day issues, such as budgets, market figures, etc. Analytics.
			04C	Balanced approach	Corporate strategy system integrates both harder and softer types of issues.
	CSS05	**Corporate planning formalization**	05A	Lack of procedure	There is no formal corporate planning procedure defined inside the enterprise.
			05B	Informal working processes	There is a strategic planning process defined. But within this set frame, there are mainly informal working processes.
			05C	Formalised planning procedures	There is a formal procedure for corporate planning and the different activities are conducted in a systematic and predefined (standardised) manner.

Table APP -1: Overview of Corporate strategy system (1/2)

Functions, Processes and Properties				Description
CSS Organisation	CSS06	Organisational integration	06A	Lack of formal organisational arrangement	There is no formal organisational arrangement for the corporate strategy system.
			06B	Management team	The management team takes on main corporate strategy processes. One manager (or assistant) might have some specific organisational responsibilities.
			06C	Planning committee	There is a committee or team that is the main body for corporate strategy processes. This team might be temporary or has changing participation models.
			06D	Planning department(s)	There is a fixed staff that has as its prime responsibility to conduct corporate planing activities. This department serves the management team independentely or might be located somewhere else.
	CSS07	Role of CCP unit	07A	Facilitation	The prime role of the CCPU lies in the support and facilitating of the units of activity.
			07B	Catalysation	The prime role of the CCPU lies in the catalysation of change processes of the corporation and its units of activity.
			07C	Integration	The prime role of the CCPU lies in leading people and integrating the organisation into an unified whole.
			07D	Directing	The prime role of the CCPU lies in controlling the different units of activity and directing their development.
			07E	Communication	The prime role of the CCPU lies in providing a platform for communication among the units of activity.
			07F	Brokering	The prime role of the CCPU lies in resolving conflicts (like mediators, diplomats) and aligning the development of the units of activity.
	CSS08	Processes blueprint	08A	Process control	The processes are conducted in a predetermined manner and there is not a lot of room for changing the planning processes in case of unanticipated events.
			08B	Contained creativity	The flow of processes follows a formatted design, but there is built in room for dealing flexibly with unanticipated (internal or external) events.
			08C	Self organisation	The CSS processes do not follow any scheme, apart from self organisation.
	CSS09	Decision making flow	09 A	Bottom up	The main strategic decisions are taken within the individual units of activity. The role of the corporate centre is rather modest.
			09 B	Top down	The main strategic decisions are taken by the corporate centre. The main role of the units of activity lies in implementing the decisions.
			09 C	Mixed	The main strategic decisions are taken in cooperation between the corporate centre and the unit of activity.
CSS Resources	CSS10	People involvement	10A	Focussed	Low amount of highly involved groups
			10B	Intensive	Broad and intense participation
			10C	Distributed	Weak but broad involvement
			10D	Poor	Narrow and weak involvement
	CSS11	Management responsibility	11A	Low priority	Management takes responsibility for the planning process but do not dedicate significant attention to it.
			11B	Strong commitment	Top management takes full responsibility for the processes and dedicate a significant amount of their time to strategizing.
			11C	Distributed commitment	Management acknowledges the importance of planning processes and dedicate their attention to it, however the ownership over the processes is distributed.
			11D	Orphan process	Management does not really take ownership of the corporate strategy processes and do not spend time on it.
	CSS12	Planning capability	12A	Gut feeling	Strategies are formed and realised by experienced managers but without much systematic use of latest planning tools and techniques.
			12B	Highly trained	Strategies are formed and realised by seasoned planners using latest management tools.
			12C	Well informed	Planning is done in a systematic manner using latest management thinking, however the experience of managers is low.
			12D	Poor	There is a low level of planning capabilities.
	CSS13	Absorptive capacity	13A	Lack of awareness	There is a low level of awareness and openness to external signals (from outside the CSS).
			13B	Low flexible capacity	There is an ability to identify external signals, but a low ability to deal with these inputs in a flexible manner.
			13C	Strong absorptive flexibility	There is an openness to identify external signals, and the CSS is able to take necessary actions to deal with these signals in a flexible manner.
	CSS14	Change climate	14A	Delayed realisation	Although there is a willingness to change, as formation and realisation of strategies are not or only loosely connected, it takes time to change.
			14B	Quick adaptation	Changes get realised quickly as there is a general willingness to change and formation and realisation of strategy is highly interconnected (probably in parallel).
			14C	Small steps change	Change can occur only in smaller steps, as there is resistance to change.

Table APP -2: Overview of Corporate strategy system (2/2)

		Context Properties				Description
Context - External Environment	EC01	Environmental change pattern	01A	Stable		Changes caused by external factors are occurring not so frequently and are only moderate in their impact (amplitude of change) on the enterprise.
			01B	Dynamic		Changes caused by external environment factors occur very frequently, however their impact is only moderate.
			01C	Volatile		External factors for change are occurring rather occasional, however when they do there is a big impact on the enterprise.
			01D	Turbulent		The environment is characterised by often occurring, high impact changes.
	EC02	Competitive complexity	02A	Moderate competition		There is only a rather low level of diverse competitive forces that confronts the enterprise (in all its businesses) and the intensity of these forces is moderate as well.
			02B	Competitive pressure		The enterprise is confronted with rather homogeneous but highly competitive forces.
			02C	Heterogeneous competitive forces		There is a heterogeneous group of different competitive forces confronting the enterprise, however they are of rather moderate intensity.
			02D	Hyper competition		The enterprise is confronted with heterogeneous and highly competitive forces.
	EC03	Stakeholder integration	03A	Stakeholder independent		There is only a small variety of relevant stakeholders, and there is not a strong connection with the enterprise.
			03B	Focussed stakeholders		There is a small variety of strongly connected stakeholders.
			03C	Stakeholder variety		There is a wide variety of stakeholders, however they are rather not important or without much influence on the enterprise.
			03D	Intricate stakeholder web		There is a variety of strongly connected stakeholders, which the enterprise has to deal with.
	EC04	Value web position	04A	Neutral dominator		The enterprise has a dominant position in the value position, however the customers do not recognise the distinctiveness.
			04B	High profile powerhouse		The enterprise holds a dominant position in the value chain and is clearly recognised by customers.
			04C	Distinguished participant		Customers recognise the distinctive traits of the enterprise, but the enterprise has a rather weak position in the value chain.
			04D	Weak position		The enterprise is not clearly distinguished and has no power position in the value web.
Context - Internal Environment	IC05	Corporate maturity	05A	Formation		The enterprise is in its infancy, being formed and shaped.
			05B	Advancement		The enterprise is advancing its resources and activity system.
			05C	Maturity		The enterprise is reaching a level of saturation and age.
			05D	Renewal		The enterprise is renewing itself.
	IC06	Value proposition	06A	Customer value		The enterprise is providing products or services aimed at offering highest possible value to customers. Logic of customer economics; customer intimacy.
			06B	System value		The enterprise is aimed at providing highest possible value in terms of excellence of the entire enterprise system. Based on system economics; operational excellence.
			06C	Product value		The enterprise is aimed at providing highest possible value through technological and product leadership. Based on best product; product leadership.
	IC07	Resources advancement	07A	Technology disruptor		The enterprise is radically changing its technologically resources base.
			07B	Paradigm breaker		The knowledge-intensive enterprise is radically innovating its knowledge base.
			07C	Learner		The enterprise is knowledge-intensive and is advancing its resources base through incremental innovation.
			07D	Technology constructor		The enterprise is mainly incrementally developing new technology.
	IC08	UOA diversity	08A	Single business		There is one main area of business the enterprise is involved in.
			08B	Related businesses		The enterprise is active in a (small) number of related businesses.
			08C	Diversified enterprise		The enterprise operates in different areas of business, some of them unrelated.
	IC09	Collaborative structure	09A	Loose network		There is a low level of collaboration between the different units of activity and a lack of (or none at all) corporate centre control.
			09B	Centralised pyramid		There is not a lot of collaboration between the units of activity, units are mainly steered by a strong dominance from the corporate centre.
			09C	Cooperative of units		A dominant corporate centre is lacking, but the units of activity are strongly connected in guiding their activities.
			09D	Integrated corporation		Both the relationships among the units of activity and with the corporate centre are strong.
	IC10	Growth horizon	10A	Defend and extend current core		Growth is mainly aimed for in the core business and its extension (or defence). Example: market penetration.
			10B	Growth in nearby businesses		Growth is aimed for in nearby businesses (in terms of product or market similarity). Examples: Globalisation; Vertical integration; Related diversification.
			10C	Growth in distant businesses		Growth is aimed for mainly in faraway businesses. Example: Unrelated diversification.
	IC11	Adaptive strength	11A	Innovative		Strong in anticipating change and acting proactively, but weak in reacting to external signals to change.
			11B	Adaptive		Strength in both reacting and being proactive.
			11C	Opportunistic		Strong in reacting to external signals to change, not very proactive.
			11D	Vulnerable		Low level of adaptivity to change signals.

Table APP-3: Overview of Properties of Context

Appendix C: Analysis of case studies – properties, functions and processes

			CoolSystem		InnoMobile		CreaStudio		InnoService		VERYSoft		GlobalCar		SolveTix		AdaptIT.com		Linux		MachOne		TelEquip		PowerSupply	
			BM = synergising coordinator		BM = synergising coordinator		BM = informal shaper		BM = informal shaper		BM = catalysing builder		BM = centralised composer		BM = informal shaper		BM = catalysing builder		BM = emergent evolver		BM = informal shaper		BM = power positioner		BM = centralised composer	
			case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference
CSS Functions		**Building resources**		0		0		0		0	x	0		0		0	x	0		0		0		0		0
		Providing purpose					x		x						x				x				x				
		Composing businesses											x												x	
		Positioning competitively																					x			
		Coordinating units of activity	x		x																					
		Coping interactively																	x							
CSS Processes		**Corporate intelligence**																								
		Strategy formation	x	0	x	0		0		0	x	0	x	1	x	0	x	0		0		0	x	0	x	0
		Strategy realisation	x				x		x		x				x		x		x		x					
		Performance management			x																				x	
CSS Principles	**CSS01** Strategy format	01A Mental model					x		x						x				x		x					
		01B Direction statement	x	0	x	0		0		0		0		1		0		1		0		0		0		0
		01C Detailed plan/report									x		x				x						x		x	
	CSS02 Planning rhythm	02A Ad hoc					x		x						x				x		x					
		02B Strategic projects		0		0		0		0		1	x	0		0		0		1		0		0		0
		02C Rotating planning cycle	x		x						x												x		x	
		02D Planning events															x									
	CSS03 Time horizon consistency	03A Short / medium term orientation					x		x		x		x		x				x		x		x			
		03B Long term orientation		1	x	0		0		0		1		1		0		0		0		0		1		0
		03C Time bridge	x														x								x	
	CSS04 Corporate strategy orientation	04A Strategic / Qualitative	x				x		x						x				x		x					
		04B Operative / Quantitative		0		1		0		0		1		0		0		0		0		0		0		1
		04C Balanced approach			x						x		x				x						x		x	
	CSS05 Corporate planning formalization	05A Lack of procedure					x		x						x				x		x					
		05B Informal working processes	x	1		0		0		0		1		0		0	x	0		0		0		0		0
		05C Formalised planning procedures			x						x		x										x		x	

Table APP-4: Case studies property analysis – Corporate strategy system (1/2)

				CoolSystem		InnoMobile		CreaStudio		InnoService		VERYSoft		GlobalCar		SolveTix		AdaptIT.com		Linux		MachOne		TelEquip		PowerSupply	
				BM = synergising coordinator		BM = synergising coordinator		BM = informal shaper		BM = informal shaper		BM = catalysing builder		BM = centralised composer		BM = informal shaper		BM = catalysing builder		BM = emergent evolver		BM = informal shaper		BM = power positioner		BM = centralised composer	
CSS		Code	Item	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference	case value	difference
CSS06 Organisational integration		06A	Lack of formal organisational arrangement		0		0	x	0	x	0		0		0		1		0	x	0	x	0		0		0
		06B	Management team									x				x		x									
		06C	Planning committee																					x			
		06D	Planning department(s)	x		x								x				x						x		x	
CSS07 Role of CCP unit		07A	Facilitation	x	0	x	0		0		0		0		0		0		0		0		0		0		0
		07B	Catalysation									x						x									
		07C	Integration					x		x						x				x							
		07D	Directing											x												x	
		07E	Communication																			x					
		07F	Brokering																					x			
CSS08 Processes blueprint		08A	Process control		0	x	1		0		0		0		0	x	0		0		0		0		1	x	0
		08B	Contained creativity	x								x				x		x						x			
		08C	Self organisation					x		x						x				x		x					
CSS09 Decision making flow		09A	Bottom up		0		0	x	1		0		1		0		0		1		0	x	0		0		0
		09B	Top down							x		x		x		x		x		x		x				x	
		09C	Mixed	x		x																		x			
CSS10 People involvement		10A	Focussed		1		0		1		0		1		0		0	x	0		1		0		0		0
		10B	Intensive	x												x						x		x		x	
		10C	Distributed			x		x				x															
		10D	Poor							x						x				x		x					
CSS11 Management responsibility		11A	Low priority		0		0		1	x	0		0		0	x	0		0		0	x	0		1		1
		11B	Strong commitment									x		x		x								x		x	
		11C	Distributed commitment	x		x																				x	
		11D	Orphan process					x												x							
CSS12 Planning capability		12A	Gut feeling		0		0		0		0		1		0	x	1	x	0		1		0		0		0
		12B	Highly trained	x		x						x		x										x		x	
		12C	Well informed																								
		12D	Poor					x		x										x		x					
CSS13 Absorptive capacity		13A	Lack of awareness		0		0		0		0		0		0		0		0		0		0		0		1
		13B	Low flexible capacity											x										x			
		13C	Strong absorptive flexibility	x		x		x		x		x				x		x		x		x				x	
CSS14 Change climate		14A	Delayed realisation		1		0		0		0		0		1		0		0		0		0		0	x	0
		14B	Quick adaptation			x		x		x		x				x		x		x		x					
		14C	Small steps change	x										x										x			

Table APP -5: Case studies property analysis – Corporate strategy system (2/2)

Table legend — Business Model (BM) archetype per case:

Case	BM archetype
CoolSystem	synergising coordinator
InnoMobile	synergising coordinator
CreaStudio	informal shaper
InnoService	informal shaper
VERYSoft	catalysing builder
GlobalCar	centralised composer
SolveTix	informal shaper
AdaptIT.com	catalysing builder
Linux	emergent evolver
MachOne	informal shaper
TelEquip	power positioner
PowerSupply	centralised composer

Within each case column: cv = case value (marked "x"), df = difference (number shown once per property category).

Code	Property	CoolSystem cv	df	InnoMobile cv	df	CreaStudio cv	df	InnoService cv	df	VERYSoft cv	df	GlobalCar cv	df	SolveTix cv	df	AdaptIT.com cv	df	Linux cv	df	MachOne cv	df	TelEquip cv	df	PowerSupply cv	df
EC01	**Environmental change pattern**																								
01A	Stable		1		0		0		0		0		0		0		1		1		0		1		0
01B	Dynamic			x		x		x		x				x						x					
01C	Volatile	x										x						x						x	
01D	Turbulent															x						x			
EC02	**Competitive complexity**																								
02A	Moderate competition		0		0	x	0		1	x	1		1		1		1		1		1		0		1
02B	Competitive pressure	x		x								x				x		x		x				x	
02C	Heterogeneous competitive forces							x						x											
02D	Hyper competition																					x			
EC03	**Stakeholder integration**																								
03A	Stakeholder independent		1		0		0		0		1		1		1		1		0		0		1		1
03B	Focussed stakeholders	x				x		x		x						x				x				x	
03C	Stakeholder variety																	x				x			
03D	Intricate stakeholder web			x								x		x											
EC04	**Value web position**																								
04A	Neutral dominator		1		0		0		0		0		0		0		0		1		0		0		1
04B	High profile powerhouse			x								x													
04C	Distinguished participant	x																x				x		x	
04D	Weak position					x		x		x				x		x				x					
IC05	**Corporate maturity**																								
05A	Formation		0		0	x	0	x	0	x	1		0	x	0		0		1		1		0		0
05B	Advancement															x		x		x					
05C	Maturity	x		x								x										x		x	
05D	Renewal																								
IC06	**Value proposition**																								
06A	Customer value	x	1		1	x	1	x	1		0		0	x	1	x	0		0	x	1	x	0	x	1
06B	System value											x													
06C	Product value			x						x								x							
IC07	**Resources advancement**																								
07A	Technology disruptor	x	0	x	0		0		0		1		0		0		1		0		0		0	x	0
07B	Paradigm breaker																								
07C	Learner					x		x								x									
07D	Technology constructor									x		x		x				x		x		x			
IC08	**UOA diversity**																								
08A	Single business		0		0	x	0	x	0	x	0		0	x	0	x	0	x	1	x	0		0		0
08B	Related businesses	x		x																		x			
08C	Diversified enterprise											x												x	
IC09	**Collaborative structure**																								
09A	Loose network		0		0		1		1		0		0		1		0	x	0		0		0		0
09B	Centralised pyramid											x								x		x		x	
09C	Cooperative of units	x		x																					
09D	Integrated corporation					x		x		x				x		x									
IC10	**Growth horizon**																								
10A	Defend and extend current core		0		0		0		0		0		1		0		0		0	x	0	x	1		1
10B	Growth in nearby businesses	x		x		x		x		x		x		x		x		x						x	
10C	Growth in distant businesses																								
IC11	**Adaptive strength**																								
11A	Innovative		1		0		1		0		0		1		1		1		0		1		0		1
11B	Adaptive			x				x		x		x				x				x				x	
11C	Opportunistic	x				x								x				x				x			
11D	Vulnerable																								

Table APP -6: Case studies property analysis – context

Appendix D: Detailed overview configurations

				Informal Shaper	Catalysing Builder	Power Positioner	Centralised Composer	Synergising Coordinator	Emergent Evolver
				CI	CII	CIII	CIV	CV	CVI
Context - External Environment	EC01	**Environmental change pattern**	01A	Stable						
			01B	Dynamic	x	x			x	
			01C	Volatile			x	x		
			01D	Turbulent					x	x
	EC02	**Competitive complexity**	02A	Moderate competition	x					
			02B	Competitive pressure					x	
			02C	Heterogeneous competitive forces		x		x		x
			02D	Hyper competition			x			
	EC03	**Stakeholder integration**	03A	Stakeholder independent						
			03B	Focussed stakeholders	x					
			03C	Stakeholder variety		x		x		x
			03D	Intricate stakeholder web			x		x	
	EC04	**Value web position**	04A	Neutral dominator						x
			04B	High profile powerhouse				x	x	
			04C	Distinguished participant			x			
			04D	Weak position	x	x				
Context - Internal Environment	IC05	**Corporate maturity**	05A	Formation	x					
			05B	Advancement		x				
			05C	Maturity			x	x	x	
			05D	Renewal					x	x
	IC06	**Value proposition**	06A	Customer value		x	x			
			06B	System value				x	x	
			06C	Product value	x	x				x
	IC07	**Resources advancement**	07A	Technology disruptor		x			x	x
			07B	Paradigm breaker		x			x	x
			07C	Learner	x		x	x		x
			07D	Technology constructor	x		x	x		x
	IC08	**UOA diversity**	08A	Single business	x	x				
			08B	Related businesses			x		x	x
			08C	Diversified enterprise				x		
	IC09	**Collaborative structure**	09A	Loose network						x
			09B	Centralised pyramid	x		x	x		
			09C	Cooperative of units					x	
			09D	Integrated corporation		x				
	IC10	**Growth horizon**	10A	Defend and extend current core					x	
			10B	Growth in nearby businesses		x	x		x	x
			10C	Growth in distant businesses				x		
	IC11	**Adaptive strength**	11A	Innovative				x	x	
			11B	Adaptive	x	x				
			11C	Opportunistic			x			x
			11D	Vulnerable			x			

Table APP -7: Overview of configurations - context key properties

				Informal Shaper	Catalysing Builder	Power Positioner	Centralised Composer	Synergising Coordinator	Emergent Evolver
				CI	CII	CIII	CIV	CV	CVI
CSS Functions	**Building resources**				x				
	Providing purpose			x					
	Composing businesses						x		
	Positioning competitively					x			
	Coordinating units of activity							x	
	Coping interactively								x
CSS Processes	**Corporate intelligence**					x			
	Strategy formation			x	x	x		x	
	Strategy realisation			x	x				x
	Performance management						x		
CSS Principles	CSS01	Strategy format	01A	Mental model	x					x
			01B	Direction statement		x			x	
			01C	Detailed plan/report			x	x		
	CSS02	Planning rhythm	02A	Ad hoc	x					
			02B	Strategic projects		x			x	
			02C	Rotating planning cycle			x	x	x	
			02D	Planning events		x				x
	CSS03	Time horizon consistency	03A	Short / medium term orientation	x					x
			03B	Long term orientation					x	
			03C	Time bridge		x	x	x		
	CSS04	Corporate strategy orientation	04A	Strategic / Qualitative	x				x	x
			04B	Operative / Quantitative				x		
			04C	Balanced approach		x	x			
	CSS05	Corporate planning formalization	05A	Lack of procedure	x					x
			05B	Informal working processes		x				
			05C	Formalised planning procedures			x	x	x	
CSS Organisation	CSS06	Organisational integration	06A	Lack of formal organisational arrangement	x					x
			06B	Management team		x				
			06C	Planning committee			x			
			06D	Planning department(s)				x	x	
	CSS07	Role of CCP unit	07A	Facilitation					x	
			07B	Catalysation		x				
			07C	Integration	x					
			07D	Directing				x		
			07E	Communication						x
			07F	Brokering			x			
	CSS08	Processes blueprint	08A	Process control			x	x		
			08B	Contained creativity		x			x	
			08C	Self organisation	x					x
	CSS09	Decision making flow	09 A	Bottom up						x
			09 B	Top down	x			x		
			09 C	Mixed		x	x		x	
CSS Resources	CSS10	People involvement	10A	Focussed		x				
			10B	Intensive			x	x		
			10C	Distributed					x	x
			10D	Poor	x					
	CSS11	Management responsibility	11A	Low priority	x					
			11B	Strong commitment		x		x		
			11C	Distributed commitment			x		x	
			11D	Orphan process						x
	CSS12	Planning capability	12A	Gut feeling		x				x
			12B	Highly trained			x	x	x	
			12C	Well informed						
			12D	Poor	x					
	CSS13	Absorptive capacity	13A	Lack of awareness						
			13B	Low flexible capacity			x	x		
			13C	Strong absorptive flexibility	x	x			x	x
	CSS14	Change climate	14A	Delayed realisation				x		
			14B	Quick adaptation	x	x			x	x
			14C	Small steps change			x			

Table APP -8: Overview of configurations – Corporate strategy system

Appendix E: CSS functions and functional views in literature

Without doing a citation analysis, we suggest to cluster the current corporate strategy literature according to the six corporate strategy system functions we have determined in this research. When overlooking the literature, the following main streams of thought can be distinguished related to the functions of corporate strategy systems in knowledge-intensive enterprises:

- PURPOSE VIEW: According to this view, the primary function of the CSS is to provide the enterprise with a meaning and a global sense of direction.
- RESOURCES VIEW: According to this view, the primary function of the CSS is to make best possible use of the corporate resources.
- POSITIONING VIEW: According to this view, the primary function of the CSS is to determine a sustainable competitive position of the enterprise in its environment.
- COMPOSITION VIEW: According to this view, the primary function of the CSS is to compose a balanced selection of businesses.
- COORDINATION VIEW: According to this view, the primary function of the CSS is to coordinate the units of activity of the enterprise.
- EVOLUTION VIEW: According to this view, the primary function of the CSS is to deal with the occurrence of anticipated and unanticipated events. This can be done through preparing for and dealing with unanticipated events and optimisation of the enterprise development process. To ensure a smooth as possible evolution of the enterprise.

These functional views will be described in more detail below with its main theories.

Purpose view

"The challenge for managers is to feel comfortable merely setting the direction for the future " - B. Regine, 1998

"Planning is changing minds, not making plans" – A. de Geus, 1988, pp. 71

"Strategic vision can empower employees to act differently, change the way the corporation operates and relates to its stakeholders and help the company move consistently toward a long-term goal. This achievement is corporate renewal in am most profound and continuing sense." – I. Wilson, 1992, pp. 27

Authors with this view of thought argue that the primary function of the CSS is to provide the enterprise with a meaning and a global sense of direction.

In the *nautical metaphor*, this means that the main guiding processes are related to determining where to go to and why. Relevant questions are for example: Where are we sailing to? Why are we sailing there? What do we like to achieve by sailing there together? Functionalities that are related to this view are described in the following table.

In the Purpose View, *sustainable corporate development* ultimately can best be guided by having a shared understanding of the situation and a commonly aimed for sense of direction. For example this can be done through 'capturing the hearts and minds' of all employees (and partners) and having everyone pushing into a common direction.

Related functionalities	Source	Description
Developing strategic intent	Prahalad & Hamel, 1989	Strategic intent envisions a desired leadership position and establishes the criterion the organisation will use to chart its progress. It is more than ambition, it also encompasses an active management process.
Corporate foresight	Gausemeier et al., 1996	Trend analysis and forecasting
Developing collective ambition	Weggeman, 1995	Collective ambition is the combination of goals plus mission and/or strategy, which are broadly supported inside the organisation and are eagerly aimed for and lived after. Ambition development is about making individual ambitions explicit and growing them by subsequently integrating them in a consistent organisational ambition.
Defining mission statements	Hellriegel & Slocum, 1991; de Wit & Meier, 1998; Cummings and Davies, 1994	Corporate mission offers the organisation a certain direction, by defining the boundaries within which strategic choices and actions must take place. Corporate mission can inspire the individuals to work together in a particular way.
Envisioning	Collins & Porras; Rowe, 1994; Wilson, 1992; Grove consultants, 1996	A vision describes the desired future the company hopes to arrive. A vision can be described as the concept for a new and desirable future reality that can be communicated throughout the organisation.
Establishing simple rules	Eisenhardt & Sull, 2001	Managers should focus on establishing a small number of simple rules, which will guide the corporate action, such as e.g. selection of opportunities.
		Five types of simple rules: How-to rules; Boundary rules; Priority rules; Timing rules; Exit rules.
Purpose giving	Bartlett & Ghoshal, 1994; Odomirok, 2000	Corporate purpose is the amalgam of motivations and intentions of the people of the enterprise. Corporate purpose is the shared opinion of the living community of people on what the enterprise was, is and should be.

Table APP -9: 'Purpose View' on CSS – related functionalities

Resources view

> *"In the long run, competitiveness derives from the ability to build, at lower cost and more speedily than competitors, the core competencies (strategic resources) that spawn unanticipated products."* - C.K. Prahalad and Gary Hamel

Authors with this view of thought argue that the primary function of the CSS is to make best possible use of the corporate resources (incl. both tangible and intangible resources, see chapter 6). In the *nautical metaphor*, this would imply that you take the resources you have available - such as e.g. the boats and material, the talents in steering, the skills of the sailors, the maps of the waters, the provisions, etc. – as the starting point and main orientation for planning your journey. Questions become relevant such as for example: how can we make best possible use of our steering talents? What new sailing skills should we develop? What waters can we best sail with our skills & material? Should we build a new boat or should we acquire additional gear?

A number of functionalities are highlighted in literature that relate to this view.

Related functionalities	Source	Description
Identifying strategic resources	Barney; Campbell; Itami; Prahalad & Hamel; etc.	Technology assessments; Intangible assets reporting; Core competence analysis; Capabilities scan; etc.
Resources selection / Resources investments	Idem	Resources acquisition; Resources leveraging; Resources divestures
Learning / Organic innovation	Idem	Growth inside the core: *"like accelerating innovation in R&D, investing in corporate ventures, and stepping up the company's metabolism by, say, speeding up operations or hiring more salespeople"* [Zook & Allen, 2003, pp. 69]

Table APP -10: 'Resources View' on CSS – related functionalities

A good example of related dynamic functionalities of corporate strategy systems in this viewpoint are the five key competences management tasks [Hamel & Prahalad, 1995], as depicted below.
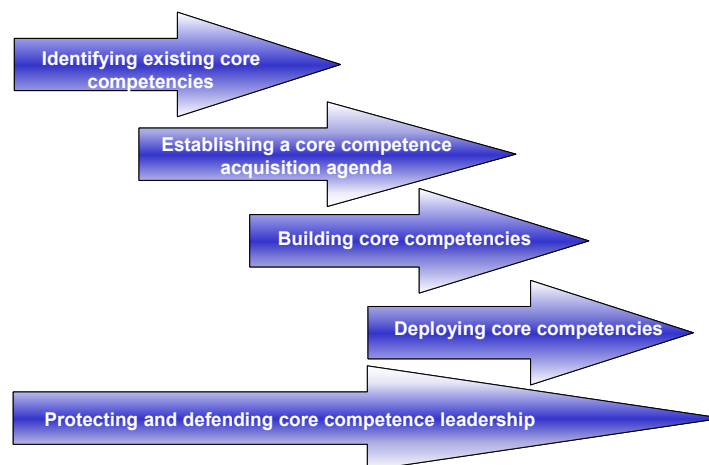

Figure APP -1: Resources building functionality – example of five competence management tasks

In the Resources View, *sustainable corporate development* ultimately can be attributed to making best possible use of those corporate resources that enable the enterprise to perform activities better or more cheaply than competitors. In a world of continuous change, companies need to maintain pressure constantly at the frontiers – building for the next round of competition. According to this view, enterprises must therefore continuously invest in and upgrade their resources, however good those resources are today, and leverage them with effective strategies into attractive businesses in which they can contribute to a competitive advantage. Because all resources depreciate throughout time, an effective corporate strategy requires continual investment in order to maintain and build valuable resources. Especially for *knowledge-intensive enterprises*, as was argued in chapter 3, the (intangible) resources are crucial and depreciate faster in other areas of business.

What if a company has no unusually valuable resources? Unfortunately, that is a common experience when resources are evaluated against the standard of competitive superiority. Or what if a company's valuable resources have been imitated or substituted by competitors? Or perhaps its resources are valuable only in industries so structurally unattractive that, regardless of how efficiently it operates, its financial returns will never be stellar. In these cases companies must continually upgrade the number and quality of their resources and associated competitive positions (i.e. value propositions) in order to hold off the almost

inevitable decay in their value. Upgrading resources means moving beyond what the company is already good at, which can be accomplished in a number of ways such as for example:

- Adding new resources for same segment/market space
- Upgrading to alternative resources for same segment/market space
- Upgrading resources for new segment/market space.

In the Resources View, corporate strategies must strive to leverage resources into all the markets in which those resources contribute to competitive advantage or to compete in new markets that improve the corporate resources.

Positioning view

> *„Firm success is a function of two areas: the attractiveness of the industry in which the firm competes an its relative position in that industry"* – Porter, 1991, pp. 99/100

> *„Insgesamt geht es bei der Positionierung um die Bestimmung des Verhältnisses zwischen einem Unternehmen und den Anspruchsgruppen seiner Umwelt."* – General Management Navigator, pp. 24

Authors with this view of thought argue that the primary function of the CSS is to determine a sustainable position of the enterprise in its environment (especially in relation to customers and competition). In a *narrow* view, the sole focus is on competitive positioning. In a *broader* view, the position within the broader environment (incl. value exchange relationships with stakeholders) is considered.

In the *nautical metaphor*, this would relate to trying to understand the external situation, the waters, possible passengers and competing fleets and trying to manoeuvre the own fleet in a favourable position. Questions rise such as what passengers should we take aboard and what can we offer them? How can we outrace our competing vessels? Which ship is out there that can help us along our way?

Following figure depicts an example of how the function of positioning can be fulfilled in a dynamic manner.
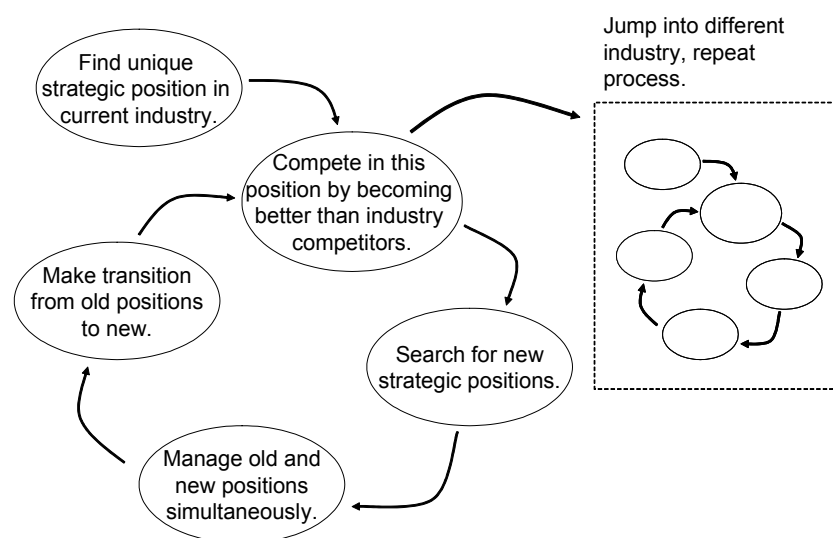

Figure APP -2: Dynamic positioning [Cusumano & Markides, 2001, p. 246]

Related functionalities	Source	Description
Dynamic positioning	Markides, 2001	Strategy involves making tough choices on three dimensions: which customers to focus on, which products to offer, and which activities to perform.
Establishing a distinctive competitive position	Porter, 1985 & 2001	The importance of establishing and maintaining a distinctive strategic position by following fundamental principles such as starting with the right goal, defining a way of competing that delivers unique value to customers, and having continuity of direction.
Creating competitive configurations	D'Aveni, 2001	Strategic supremacy can be achieved by mastering the art of competitive configuration, meaning the ability to create an industry structure of great power alliances, targets, and spheres of influence that reflect the enterprise's world view of competitive space.
Excelling in value disciplines	Treacy & Wiersema, 1993	Taking leadership positions in industry means to become champion in (at least) one of three value disciplines while meeting industry standards in the other two: Customer intimacy; Operational excellence; Product leadership
Choosing strategic options	Hax & Wilde II, 2001	Through three 'adaptive processes' (operational effectiveness, customer targeting, innovation) enterprise need to choose one of three different strategic positions that *"reflect fundamental new sources of profitability"*: <u>System lock-in</u>: competition based on system economics. <u>Best product</u>: competition based on product economics. <u>Customer solutions</u>: competition based on customer economics
Determining relations with stakeholders	GMN, 2001	The external environment incorporates all groups that can influence the activities of the enterprise, or alternatively be influenced by them. Positioning means determining the exchange relationships (and their intensity) with these stakeholders.

Table APP -11: 'Positioning View' on CSS – related functionalities

In the Positioning View, *sustainable corporate development* ultimately depends on being better positioned within the (input & output) markets / value chain than the competitors in delivering value to stakeholders (especially customers), i.e. delivering value propositions that are economically and sustainably 'better' than competitors. The main argument goes that an enterprise can only be sustainable if it is able to deliver superior or distinctive value to customers and/or other stakeholders over time. This is done by determining the focus of corporate activities, as in the nature of the value added and interaction with its stakeholders [e.g. Thompson, 2001]. It should therefore aim to occupy a position in industry that is significantly different than that of competitors, i.e. the enterprise aims for achieving competitive advantage and determines the way it intends to be different than its competitors [e.g. Porter, 1980; Andrews, 1987]. In this sense, corporate strategy should determine the position of the enterprise in its environment: establish the value exchange relationship with customers, markets, industry, suppliers and competition.

Knowledge-intensive enterprises, as other enterprises, face competition; sometimes tough, sometimes less so. Moreover, especially in fast evolving or newly opening industries it might not always be clear (in comparison to mature and established industries) who are the customers and what they expect, as well as who will be the direct competitors. Also competitors might shift over time. See for example Microsoft, who through their technological development and entry into different businesses have faced competition from Apple, IBM & Sun (on operating systems, office applications – vs. DOS/Windows, Office), Netscape (on

internet browsers - vs. Internet Explorer), Oracle & SAP (on databases, business applications), AOLTimeWarner (on multimedia access – vs. MSN.net), Sony & Sega (on games, consoles – vs. Gamebox), open source solutions (such as e.g. Linux & Apache, on again operating systems, server software) and Google (on search engines, multimedia).

Composition view

"Corporate strategy is what makes the corporate whole add up to more than the sum of its business units parts" - Porter, 1987

Authors with this view of thought argue that the primary function of the CSS is to compose a balanced selection of businesses (units of economic activity). In the *nautical metaphor*, this would relate to trying to establish a balanced selection of waters to sail in and types of boats to sail with. Questions become relevant such as for example: what kind of waters will we sail in? What type of boat will we take (e.g. sailboat, speedboat, etc.)? What new boats can we take for waters we have not seen? Are there boats we can buy to enlarge our fleet?

Related functionalities	Source	Description
Corporate portfolio composition	Bruce Henderson, 1970 (BCG); Hedley, 1977	BCG growth-share matrix displays the various business units on a graph of the market growth rate vs. market share relative to competitors. Helping in understanding and making strategic decisions across multiple business or product portfolios
Integration decisions	De Wit & Meyer, 1999	<u>Vertical integration</u>: defines the degree to which a firm owns its upstream suppliers and/or its downstream buyers. This can be done either through backward (e.g. assembly integrates intermediate manufacturing) or forward (e.g. assembly integrates distribution) integration. <u>Horizontal integration</u>: is the acquisition of additional business activities at the same level of the value chain, which can be done by internal or external expansion.
Diversification	De Wit & Meyer, 1999; Gomez & Ganz, 1992; BCG	<u>Related diversification</u>: diversifying into businesses with strategic fit, meaningful value chain relationships or unifying strategic themes. <u>Unrelated diversification</u>: diversifying into businesses with neither strategic fit, neither meaningful value chain relationships nor unifying strategic themes. Firms pursuing unrelated diversification are often referred to as conglomerates. Processes: create & steer diversity; control diversity; exploit diversity.
Managing a portfolio of strategies	Beinhocker, 2001	Enterprises have to step back, look at their strategic portfolio and ask themselves whether the mix is right. The portfolio has to contain strategies that differ according to three criteria: length of time frame, risk and relatedness to the current business.
Managing real options	Gertner & Rosenfield, 2000; Luehrman, 1998; Williamson, 2001	Real options concerns the explicit valuation of the opportunities associated with changing decisions in response to the resolution of relevant uncertainty. Involves incorporating into the valuation process today the opportunity that the company will enjoy later to take actions in response to new knowledge and the resolution of uncertainty

Table APP -12: 'Composition View' on CSS – related functionalities

In the Composition View, *sustainable corporate development* ultimately depends on the optimal selection of businesses or areas of economic activity. Corporate level strategising becomes a matter of evaluating the current set of businesses / areas of economic activity, identifying new business opportunities and establishing the level of investment in the different businesses of a balanced portfolio. The businesses are regarded as sources of future revenues and the corporate centre is regarded as a holding that invests in order to create a portfolio that balances risks, expectations and available resources.

Knowledge-intensive enterprises, as any other type of enterprise, can always ask the question - should we stick to our knitting (our current business/-es)? Or, should we diversify into other areas of activity? Especially, in for example business where sectors of industry overlap or converging new technologies come up, many opportunities for new or uncharted business ideas can come up. In these kinds of situations, the decisions related to what areas of activity to be active in and in which not and with what level of intensity, seems highly relevant.

Coordination view

> *"(The) key strategic task is the reconfiguration of roles and relationships among this constellation of actors (suppliers, business partners, allies, customers) in order to mobilize the creation of value in new forms …." -*
>
> Normann & Ramirez, 1993

Authors with this view of thought argue that the primary function of the CSS is to coordinate the units of activity (and their development) of the enterprise. In a *narrow* view, the coordination view involves cooperation and control of the enterprise's units of activity. In a *broader* view, it includes also the design of the collaborative network which the enterprise is part of.

In the *nautical metaphor*, the Coordination View relates to coordinating the flowtilla of ships, aligning their objectives and enabling cooperation during their travels. Questions become relevant such as who is doing what? In what formation are we sailing? How can we cooperate during our common travels?

In the Coordination View, *sustainable corporate development* ultimately depends on achieving higher levels of synergy (higher than competitors and than markets) between the different units of economic activity. Corporate strategy should focus on organising, cooperating and controlling the units of activity of the enterprise. Coordination deals with the question how the business units / units of activity must be managed to achieve the envisioned added value. Coordination [e.g. Andrews, 1987; De Wit & Meyer, 1999] can be divided into the issue of <u>cooperation</u> - the cooperation between those businesses, their activities and their resources (horizontal relationships between different elements of the enterprise, or network); and the issue of <u>control</u> - the control of those businesses, their activities and their resources (vertical relationship with the 'centre' and the different elements of the enterprise, or network).

Related functionalities	Source	Description
Designing (adaptive) organisational forms	Myers, 1996	Enabling the enterprise as a group of people to combine, co-ordinate, and control resources and activities in order to produce value, all in a way appropriate to the environment in which the business competes. Resulting organisation should be intended as constantly adapting and evolving.
Value constellations – designing interactive strategies	Normann & Ramirez, 1993	Focus of strategic analysis is the value creating system within which different economic partners work together to co-produce value.
Patching	Eisenhardt & Brown, 1999	Patching is the frequent remapping of businesses to fit changing market opportunities. It involves combining, splitting, exiting and transferring businesses within the corporation. Corporate executives set the lineup of businesses within the corporation and keep it aligned with shifting markets.
Collaboration; Establishing collaborative networks	Moschowitz; Katzy; Camarinha-Matos; Skyrme	Establishing of inter- and intra-organisational collaborative networks and relationships. Different forms and shapes are possible: e.g. extended enterprise, fuzzy structures [Weggeman], hypertext organisations [Takeuchi & Nonaka], virtual organisation
Coevolving	Eisenhardt & Galunic, 2000	Coevolving turns the corporation into an ecosystem with corporate strategy in the hands of the business unit managers. Build collaborative teams and reward self-interest, let competition flourish – collaborate less to gain more.

Table APP -13: 'Coordination View' on CSS – related functionalities

Two main arguments underlie the importance of the Coordination View for *knowledge-intensive enterprise*. First of all, in areas of businesses where markets and resources develop dynamically and unexpectedly, the coordination of activities so as to optimally match those resources with customer demands is a task of crucial importance. Secondly, because of rapid science & technology development and diffusion, enterprises can not master everything by themselves and should rather focus on certain specialisations. The task of coordinating not only 'internal' activities, but also cooperating and controlling 'external' fields of activities - in e.g. technology alliances, strategic R&D networks and research consortia - becomes ever more daunting.

Evolution view

"(Corporate strategy is) concerned with the actions that organizations take to deal with the changes, opportunities, threats, challenges and surprises in their external and internal environments." - Thompson, 2001

"Strategic thinking that assumes stability, predictability, and well-defined markets no longer works" – Santa Fe Center for Emergent Strategies, 2000

"Individuals and groups of individuals in an organization can choose, plan, and control their next intervention but they cannot choose, plan, or control the long-term outcome of that intervention" – Stacey, 1995, pp. 490

Authors with this view of thought argue that the primary function of the CSS is to ensure a smooth as possible evolution of the enterprise. This can be done through preparing for and dealing with unanticipated events and optimisation of the enterprise development process. In the *nautical metaphor*, this would relate to instead of planning every step of the journey,

focussing on navigating through the waters as they come and prepare for dealing with every situation as it occurs. Questions occur such as: How can we deal with weather conditions? How can we prepare for bad weather, rough seas? What should we do with defects to our ships and instruments? How can we enable all sailors and shipmates to take their own decisions in case situations require so?

Related functionalities	Source	Description
Self organisation	Stacey, 1995	Organisations are nonlinear, network feedback (complex adaptive) systems. The central evolutionary and transformational processes in organisations are ones of spontaneous self organisation: *"new strategic direction, renewal, transformation, and innovation can only emerge. They must be negotiated in real time and cannot be arranged in advance".*
Complex-evolving systems	Mittleton-Kelly, 2003	*Emergence* should be facilitated rather than inhibited, and *self organisation* should be encouraged, as should *exploration of the space of possibilities* available to an organisation. An organisation is an entity capable of *creating new order*, capable of *re-creating* itself. Management should focus on the creation of *conditions that facilitate* constant co-evolution within a changing environment, and should encourage the *co-creation of new organisational form* with those directly affected.
Swarm intelligence	Bonabeau & Meyer, 2001	Swarm intelligence is the collective behaviour that emerges from a group of social insects. Three features: flexibility; robustness, self-organisation.
Grass roots strategy making	Wall & Wall, 1995	Instead of being a structured, time-bound activity undertaken by a single group of senior managers and professionals, it is evolving into an iterative, ongoing process that involves the entire organization.
Emergent strategies	Santa Fe Center for Emergent Strategies; Ideburg, 1993	Emergent strategies are flexible enough to adapt to the unexpected, but stable enough to be coherent. As it is impossible to develop a view of the future and formulate explicit objectives in an unpredictable environment, the solution is to react flexibly, opportunistic and accidentally to unpredictable environments.
Revitalization - changing the ways of change	Pascale, 1997	Three interventions that will restore companies to vital agility and keep them in good health: Incorporating employees fully into the process of dealing with business challenges. Leading from a different place so as to sharpen and maintain employee involvement and constructive stress. Instilling mental disciplines that will make people behave differently and then help them to sustain their new behaviour into the future

Table APP -14: 'Evolution View' on CSS – related functionalities

According to the Evolution View, *sustainable corporate development* ultimately is determined by how well the enterprise is able to evolve in a natural and smooth manner. Corporate development goes hand in hand with smaller and bigger shocks and the enterprise that can anticipate or react to these events in the best way will outperform its rivals. Actually there are two main arguments behind this view. According to one argument, enterprises are confronted with so much internal and external change, that the change itself can not be predicted with great detail. Furthermore, to design a detailed sequence of management interventions makes no sense, because the response (nonlinear cause & effect patterns) of internal and external systems can not be overseen. The second argument, which is more or less a

consequence of the first argument, goes that in complex and unpredictable systems (such as the enterprise) problems are best solved where they occur, and therefore corporate planning and development should involve as much as possible all employees of the organisation. The idea is that top management should focus on establishing an environment in which employees can take their own decisions. As a result a pattern of corporate development will emerge spontaneously.

As it might seem reasonable to view *knowledge-intensive enterprises* as complex evolving systems, this view holds implications for its CSS. Especially in complex, dynamic organisations or in fast paced markets, it seems indeed difficult to predict long term developments and nothing more would rest for the CSS to prepare the organisation in dealing with changes as they occur. Also in organisations with a high amount of professionals in the primary value adding activities - such as e.g. in professional services – the second argument of leaving as much room to individuals to make their own decisions might seem a solution and self organisation would become the key mechanism for corporate development.

Appendix F: CSS processes and instruments in literature

"The goal of a formal strategic planning process is to make sure that key decision makers have a solid understanding of the business, share a common fact base, and agree on important assumptions." – Kaplan & Beinhocker, 2003

CSS processes are the logical sequences of activity that take place within the corporate strategy system, including for example strategy formation and strategy realisation activities. When these processes are done in a formal and deliberate manner, they can also be referred to as 'corporate strategic planning'.

The processes of strategy relate to how strategies have come about, the ways in which decisions are made. Typically, strategy processes start with a strategic analysis (of for example internal and external environment), the formulation of a strategy, and the implementation of a strategy. Also the processes of strategy evaluation and strategic control are usually regarded as main processes of strategy. To illustrate a typical strategic planning process, the following figure gives an idea of how the processes of strategy making where considered in the old works of SunTzu.
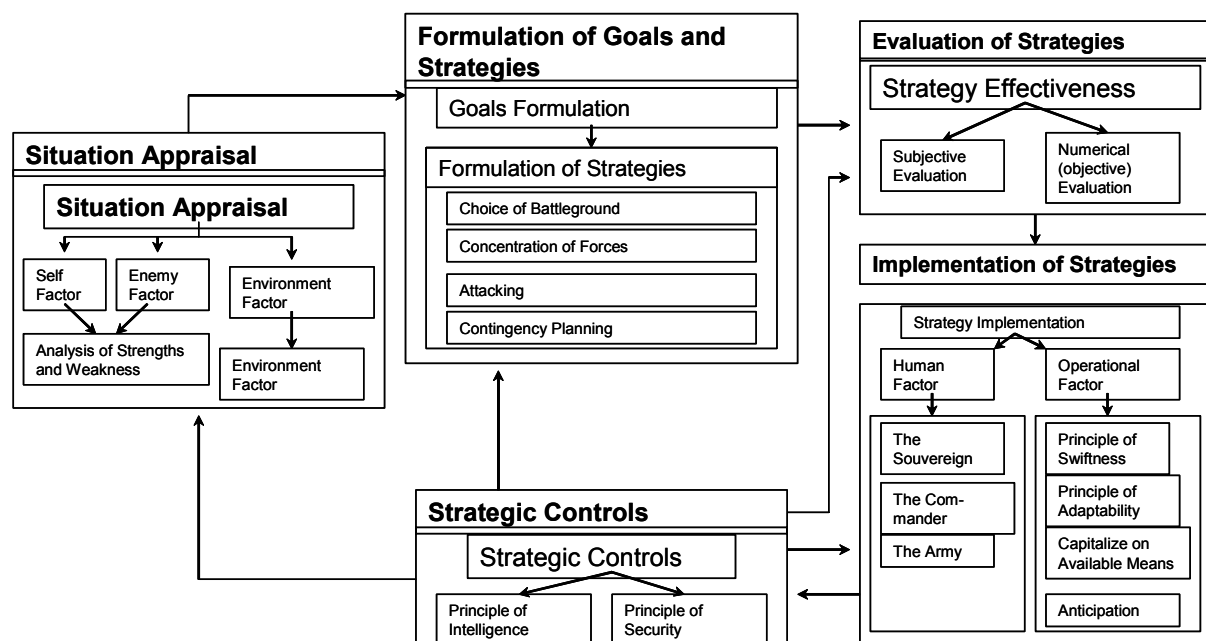

Figure APP -3: Strategic processes

In a study by Bain & Company [Rigby, 2005] strategic planning is described as being a systematic process to ask and answer the most critical questions confronting a management team—especially large, irrevocable resource commitment decisions. According to this study, successful strategic planning processes are implemented to: change the direction and performance of a business; encourage fact-based discussions of politically sensitive issues; create a common framework for decision making in the organization; set a proper context for budget decisions and performance evaluations; train managers to develop better information to make better decisions; Increase confidence in the business's direction.

In a number of studies, the role and importance of different planning instruments is investigated. One of such studies is a regularly conducted worldwide survey, with executives at hundreds of companies in North America, Europe, Asia, and South-America, on the use of management tools [Bain & Company *"Management Tools 2005"* - By Darrell Rigby; see: www.bain.com].
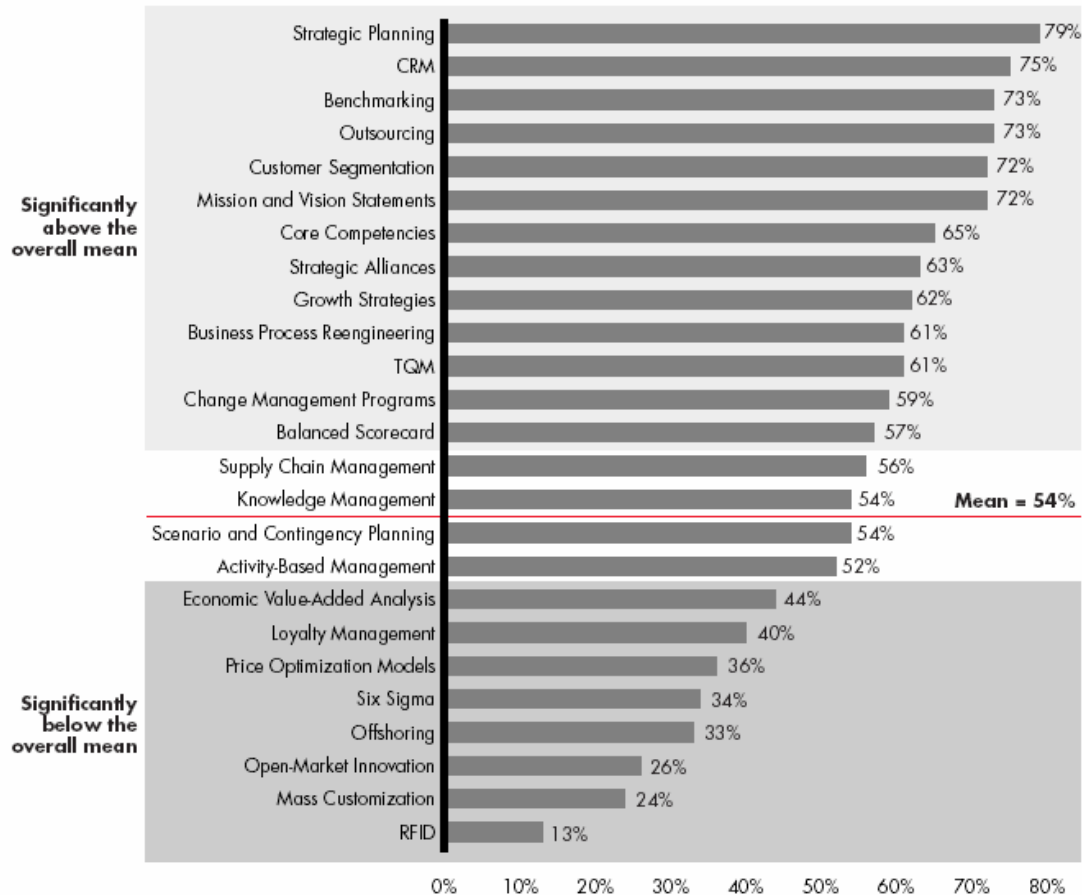

Figure APP -4: Management tool usage [Rigby, 2005]

This survey shows that strategic planning holds the number one spot on executive agendas worldwide: *"Strategic planning is a perennial leader in tool use, with near-universal use among companies in every region except Asia."*

In an online survey study conducted by McKinsey [McKinsey Quarterly July/Aug 2006: Survey of business executives], the researchers find that 58% of respondents who indicate that their company have a formal strategic planning process evaluate the role of strategic planning in developing the company's strategy is extremely siginificant ot very siginificant. Moreover, they have concluded that *"using a formal planning process leads to greater satisfaction: compared with only 16 percent of respondents who reports dissatisfaction with their company's approach, 55 percent of those who are satisfied with their strategic-planning group is among the most influential groups in making strategic decisions."* [p. 4]

The following reviews some of the literature related to the corporate strategy system processes and exemplary lists some planning instruments that can be applied in each process.

Corporate intelligence relates to how a knowledge-intensive enterprise picks up information and processes the information in order to use for strategic planning. According to Regner [in Volberda & Elfring, 2001], there are four different ways in which enterprises strategically learn (gathers and processes information) about the environment:

- *Intelligence*: formal search in the environment for information and intelligence likely to invoke strategic changes;
- *Informal scanning*: informal search for changes and opportunities in the environment;
- *Experience*: knowledge acquisition through direct experience, either formal or informal;
- *Experiment*: formal organisational experiments aimed at adaptation.

The following figure illustrates nicely the different activities that are associated with corporate intelligence management, as it differentiates the information location, the access method and focus of strategic analysis:
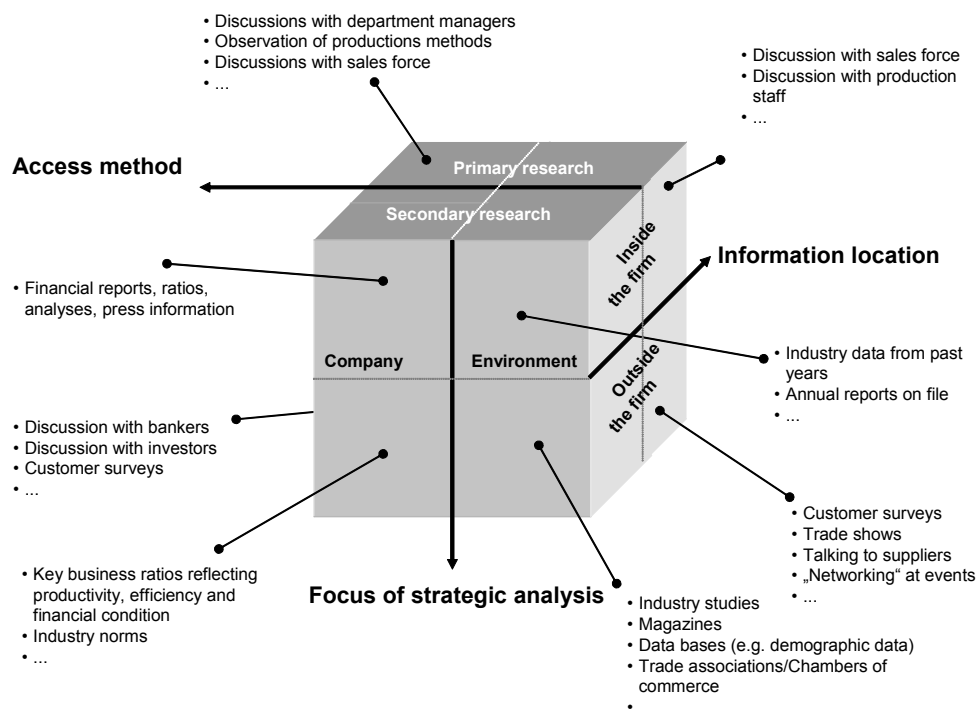

Figure APP -5: Corporate intelligence [Fry & weinzommer, 1999]

Instrument	Description	Author(s)
Expert questioning	Experts from different disciplines are questioned about the further development. The aggregation of the expert opinions leads to an image of possible further development. The main problem is the selection of the experts. The composition of intern and extern experts must be adapted to the situation. Integrating customers and suppliers can help to achieve a good picture.	Wolfrum (1991)
Delphi method	Benefits are the free timing of the experts, the possibility to change a opinion in anonymity, the relatively low costs and the flexible way of composing the method. Weak points are the high dependence of results on question formulation, the method lacks of scientific rigour, aggregation of groups opinions and the pressure of conformity can lead to lack of reliability.	Wechsler (1990)

Instrument	Description	Author(s)
Relevance tree method	The method can give decision supporting information for the accessibility of strategic goals, the necessary actions to achieve the strategic goals and the priority settings in respect of the strategic goals. The method can only be used as secondary completion of other prognosis methods as the relevance tree method is based on the results of other methods.	Makridakis and Wheelwright (1973)
Cross impact matrix	The method is used to predict the performance of a complex system in the future, and to study the independences of the components.	Kreilkamp (1987); Harting (1992)
Customer segmentation	Subdivides markets into discrete customer groups that share similar characteristics in order to develop tailored product offerings or marketing programs. Aliases/related topics: market segmentation, one-to-one marketing, factor /cluster analysis.	Rigby (2001)
Scenario analysis	The scenario analysis takes possible disrupting incidents into consideration. The scenario method is a method to bring more transparency to complex decision mking. There is a pressure to take all chances and risks into consideration. Scenarios give a wide perspective of possible developments.	Reibnitz (1991); Geschka and Hammer (1990); Gausemeier et al., 1996
Market disruption analysis	Detects early signs of new technologies and trends that can disrupt established market dynamics. Aliases/related topics: disruptive technologies, profit pools, value migration.	Rigby (2001)

Strategy formation consists of the activities of the actual decision making and strategy creation. It is also referred to as 'strategy formulation', 'strategy crafting', 'strategy development', 'strategising', or 'strategic planning'. A big chunk of strategic planning literature focuses on this aspect of the corporate strategy system processes. For example Mintzberg & Waters [1984] focus on decision making logic, which characterises the way in which strategic initiatives are formed and shaped inside an enterprise:

- *Planning*: fully conscious and controlled thought process;
- *Entrepreneurial*: semi-conscious process;
- *Learning by Experience*: evolutionary process of repetitive nature.

Another example is from Shrivastava [1994] who identifies four different models of decision making power, which characterises the power distribution related to how strategic decisions are made inside an enterprise (centralisation versus decentralisation):

- *Autocratic*: a single manager is the key decision maker;
- *Bureaucratic*: well defined and documented stepwise procedures for handling all decisions;
- *Adaptive*: decisions flow from previously made decisions; formal plans are a starting point for decision making;
- *Political*: several (groups of) key decision makers make decisions.

Instrument	Description	Author(s)
Market-attractiveness / competitive strength Portfolio	The market attractiveness / competition portfolio is an easy understandable method with high transparency. For each strategic department a strategic mission can be derived. Because of it's lack of objectivity the method can not be used for a detailed analysis of competition	Hax and Majluf (1992)

Technology Portfolio from Pfeiffer	A specialized analysis instrument for the portfolio of technologies. Derivation of research and development priorities. Separate analysis of product and process technologies.	Pfeiffer (1986); Wolfrum (1991)
Technology Portfolio from McKinsey	Analysis of technology attractiveness and technology position. Derivation of research and development priorities from a category of technologies. The technology portfolio of McKinsey tries to integrate market - and technology dimensions	Michel (1987)
Corporate Venturing	Invests in new products or technologies by funding businesses inside or outside the company. Aliases/related topics: business incubation, core capabilities, corporate entrepreneurship, direct investing.	Rigby (2001)
Innovation Portfolios	An advantage is the inclusion and evaluation of the risk of R&D activities. Interdependences between opportunities and environmental special features can be translated in recommendations for action.	Sommerlatte & Deschamps (1985); Michel (1987)
Real option analysis	Analyses and invests in real assets (such as facilities, people, and products) as options, in much the same way financial managers analyse and invest in stock options. Related topics: discounted cash flows, scenario planning, shareholder value analysis.	Rigby (2001)
Growth strategies	Identifies and directs resources toward opportunities for profitable growth. Related topics: managing innovation, market migration analysis.	Rigby (2001)

Strategy realisation consists of activities related to execution of the corporate strategy. Strategy realisation is also referred to as 'strategy implementation', 'strategy execution', among others. It deals with the ways in which strategic initiatives lead to action inside an organisation. Well known literature focussing on this aspect of the CSS processes is the study from Bourgeois & Brodwin [1984] that has identified five ways in which strategy implementation can be fulfilled:

- *Commander*: centrally formulated strategy implemented top down;
- *Change*: focus on the transformation of organisational structure and systems;
- *Collaborative*: involving management to get commitment from the start;
- *Cultural*: implement strategy through the infusion of a corporate culture;
- *Crescive*: drawing on managers' inclination to develop opportunities in day-to-day management.

Instrument	Description	Author(s)
Outsourcing	Using third parties to perform non-core business activities. Related topics: core capabilities, strategic alliances, value chain analysis.	Rigby (2001)
Reengineering	The radical redesign of core business processes to achieve dramatic improvements in productivity, cycle times, and quality. Related topics: process redesign, downsizing, cycle time reduction, horizontal organizations, overhead value analysis, web enabled.	Rigby (2001)
Merger integration teams	Group of senior managers from two merged companies charged with delivering on sales and operating synergies identified during the deal's due diligence. Related topics: mergers and acquisitions, strategic alliances.	Rigby (2001)
Strategic alliances	Agreements between firms in which each commits resources to achieve a common set of objectives. Related topics: joint venture, networks, value-managed relationships, virtual organizations.	Rigby (2001)

Performance management deals with the keeping track of the realisation of corporate strategy and possibly taking corrective measures based on accurate measurement. It is also referred to as 'strategic control' or 'strategic monitoring'. According to for example Feurer and Chaharbaghi [1995, pp. 74] *"it is the purpose of performance measurement systems to provide feedback for the cognitive and behavioural learning processes. Thus, a performance measurement system must provide information which can be used for the formulation of strategies as well as information about day-to-day performance. A performance measurement system should therefore include: strategic measures which generate knowledge that can be used for the formulation of strategies; operational measures which provide instant feedback on the implementation of strategies."*

The main idea behind performance management is that in order to understand the effectiveness of strategies and the activities conducted as a result, it is necessary to measure their impact – i.e. to measure corporate performance: *"The paradox of large organizations – firms succeed, grow, specialize internally, disperse their functioning, and then find it difficult to connect measures of functioning with financial results and long-term economic performance – is at the core of the performance measurement problem many firms experience"* [Meyer, 2002, pp. 37]. Paauwe [2004] states that performance measurement should make the chain of Activities to Outcomes to Performance transparent. In this way, possibly corrective action can be taken and the transparency achieved will feed additional strategic planning processes, in an iterative loop (like a learning cycle).

Traditionally, performance measurement or strategic control was using financial measures only. Latest since Kaplan & Norton's Balanced Scorecard concept and all the attention for intangible assets measurement [refer], there is agreement that performance measurement should include both financial and non-financial measures of performance: *"Balanced performance measurement is an appealing concept, but in practice it is very difficult. Balanced measurement involves measuring both financial and non-financial performance. Often, non-financial performance is measured in several domains – for example the customer, internal processes, and learning and innovation."* [Meyer, 2002, p. 81]

Paauwe [2004, pp. 69] shows that *"we … need a more encompassing and sophisticated definition of performance, one that takes into account the pluralistic / multidimensional nature of the concept".* He exemplary introduces following areas of measurement: profit, market value, market share, sales increase, productivity, product/service quality, customer satisfaction, development of products/ services, future investments.

As one example of an integrated corporate wide system for performance management, following shows an integrated approach based on stakeholder value: *"for this purpose a hierarchy of measures need to be developed in which strategic and operational measures are aligned. However, a single hierarchy of measures cannot reflect the whole value system of the organization which combines the goals of all stakeholders. It is therefore necessary to develop a hierarchy of measurements for each group of stakeholders. Once developed, these hierarchies can be interlinked to form one comprehensive performance measurement system."* [Feurer and Chaharbaghi, 1995, p. 74]
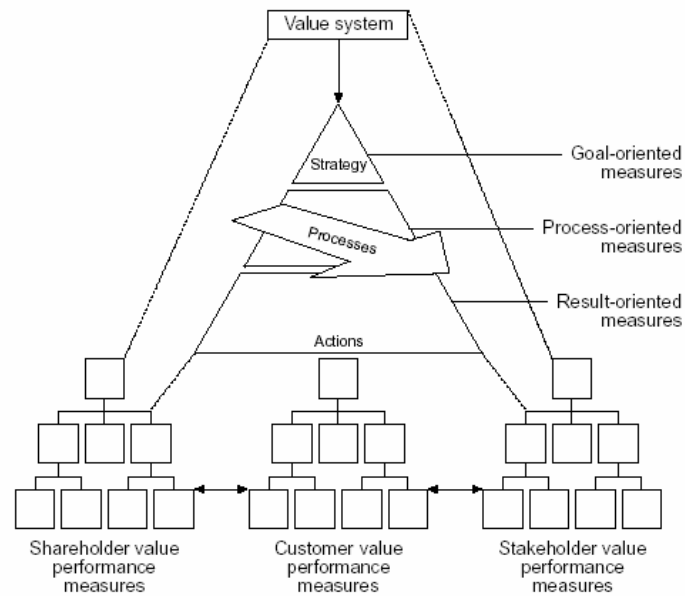
Figure APP -6: Performance management system based on stakeholder value

Meyer [2002] declares that by doing so (following an integrated, multidimensional approach) performance management can fulfil seven purposes: look back & look ahead; roll up & cascade down; compensate & motivate; compare.

Instrument	Description	Author(s)
Balanced Scorecard	Translates mission and vision statements into quantifiable measures and gauges whether management is achieving desired results. Related topics: management by objectives (MBO), strategic balance sheet.	Kaplan & Norton; Rigby (2001)
Activity based management	Tracks overhead and indirect costs by activity and traces them to specific products and customers, allowing more accurate cost allocation and decision-making.	Rigby (2001)
Customer satisfaction measurements	Collects input from customers to measure satisfaction, prioritise needs, and determine key customer requirements.	Rigby (2001)
Pay-for performance	Ties management compensation to measurable and controllable performance targets based on corporate objectives.	Rigby (2001)
Shareholder Value Analysis	Measures a company's or business unit's ability to earn more than its total cost of capital. Provides a framework to assess alternatives for increasing value to shareholders. Related topics: discounted cash flow analysis, free cash flow analysis, economic value added, ROA, ROI, RONA techniques.	Rigby (2001)

Summary

This research focuses on the specific contexts of knowledge-intensive enterprises (KIE). *Knowledge-intensive enterprises* are defined as purposeful, living systems with mainly knowledge workers in the primary process or at least in the technical staff when this has a dominant influence on the functioning of the primary process. Knowledge workers can be for example problem solvers, consultants, designers, analysts, programmers, inventors or engineers. The overall category of knowledge-intensive enterprises is divided in three groups, namely that of 'talent-intensive', 'information-intensive' and 'technology-intensive' enterprises. Although KIE can be found in other sectors as well, the group of 'talent-intensive' enterprises has been represented in this research by case study companies from the professional services industry, 'information-intensive' enterprises by cases from the ICT industry and 'technology-intensive' enterprises by cases from the automotive industry. In comparison to other types of enterprises, knowledge-intensive enterprises have intangible assets such as human talent, intelligence or advanced technology as their core assets. They have to rely strongly on creative work, to posses strong problem solving skills and to invest heavily in the future. And these features are no luxuries, but are simply necessary capacities in order to compete, adapt and survive in the young, dynamic or volatile environments of the knowledge economy.

This research sets out to explore what role corporate strategy plays in knowledge-intensive enterprises. The object of study is the corporate strategy system (CSS) in knowledge-intensive enterprises. A strategy can be either a deliberate plan or a non-deliberate pattern of decisions to reach a certain purpose. A corporate strategy (as opposed to for example functional or business strategy) is a strategy that determines corporate development. In line with this understanding of strategy and corporate strategy, the *corporate strategy system* is defined as the corporate sub system that realises corporate strategy, i.e. the corporate sub system that governs corporate development. The corporate strategy system is looked at in this research through a living system lens. In this view, the corporate strategy system is an integrated, living subsystem (i.e. an organ) of the living KIE system that fulfils the function of governing corporate development, i.e. the system of people and activities that are involved in the KIE with forming and realising corporate strategies.

In corporate practice different forms of shaping and realising corporate strategies can be found. However, the starting assumption of this research is that this variety of practices can in its essence be brought down to a limited number of fundamental shapes ('types' or 'gestalts'). By doing so, the main goal of this research is to explore how these basic types look like and what functions corporate planning thus fulfils for knowledge-intensive enterprises. This research has been guided by the primary research question: *what are the distinctive properties of corporate strategy systems, and what configurations of these properties can be derived from studying knowledge-intensive enterprises?*

Starting from the research question and scope, the state of the art in literature has been studied. This study has made clear that there are various schools of strategy thought and a number of debates about the content, process and context of strategy take place in the academic domain. The study shows that the academic field of strategy is fragmented. However, there are a number of synthesising, integrative streams of current literature. The configuration school of strategy research is considered as being one of such synthesising schools of thought. This school has produced various studies on different aspects of strategy systems. However, the main conclusion from the state of the art is that none of these previous (configuration) studies can provide substantial enough answers to the guiding research question, i.e. the functioning of corporate strategy systems in the population of knowledge-intensive enterprises. Therefore an explorative research approach has been chosen. The research roadmap has been designed according to methodological guidelines for conducting explorative multiple case studies [e.g. Eisenhardt, 1989; Yin, 1994; and Weggeman, 2001]. The overarching objective of the followed research methodology has been to build theory in the form of conceptual configurations. The process of building configurations is grounded on the methodological guidelines of the configuration school [e.g. Miller & Friessen, 1984; and Mintzberg, 1983] and makes use of the scenario technique for data handling and analysis.

Following the research methodology, the research has started with an empirical investigation consisting of twelve case studies. The case studies were selected using theoretical sampling criteria and they represent six theoretical groups: small single business enterprises from the ICT, professional and automotive industry; large multi-business enterprises from the ICT and automotive industry; as well as a network organisation. The case studies display a wide ranging and rich variety of corporate strategy systems in practice. Some of the case study enterprises are with practically no formal or organised arrangements for the corporate strategy systems; enterprises where only the entrepreneur with his managers discuss informally about the future of the company. In contrast, there are also enterprises where many different groups inside of the whole corporation participate intensively in cyclical planning procedures; enterprises where a range of strategic decisions are taken in annual planning meetings and processes. Also, the cases display big differences in the role that the corporate centre plays in the corporate strategy system: in some cases a central planning unit directs and steers the units of activity; in others, a small team is mediating conflicts between units of activity; other cases have the units working strongly together inside the corporate strategy system. Also the involvement of top management and employees is practised in very different ways. The differences between the strategy practices truly cut across the theoretical groups of cases, as the differences between cases can not be solely linked to the dimensions of company size and KIE category.

What has followed is a process of constructing configurations, which is grounded in the case studies. The process of configuration construction is based on guidelines of the configuration school and has accordingly been structured in two main phases: first an investigation of the functions, processes and characteristic properties of corporate strategy systems and their contexts (in KIE); and secondly an exploration of the natural relationships between these context and system building blocks, the formulation of propositions about these relations, as well as a description of the resulting conceptual configurations.

In the first phase of configuration building the functions, processes and distinctive properties of system and context, have been determined. The first phase of the cross case analysis has identified the following primary corporate strategy system functions:

- *Providing purpose*: providing the enterprise with a meaning and a global sense of direction.
- *Building resources*: selecting, developing and leveraging strategic resources.
- *Positioning competitively*: determining a sustainable competitive position of the enterprise in its environment
- *Composing businesses*: composing a balanced selection of businesses (or units of economic activity).
- *Coordinating units of activity*: coordinating the units of activity (and their development) of the enterprise.
- *Coping interactively*: optimising the corporate evolutionary process by preparing for and dealing with unanticipated events.

The phase of the research has also identified that the corporate strategy system has the following main processes:

- *Corporate intelligence*: identifying, gathering, analysing, preparing and communicating information that is required for strategy formation (related to the CSS functions).
- *Strategy formation*: evaluating options, setting priorities, taking decisions and integrating them into a coherent corporate strategy.
- *Strategy realisation*: communicating strategy, preparing its execution, setting up strategic (change) initiatives and leading action for development of the enterprise.
- *Performance management*: keeping track of strategy realisation, measuring progress (against targets) and possibly correcting strategy.

The functions and processes of the corporate strategy system are the answer to the first sub question: what functions and processes do corporate strategy systems fulfil in knowledge-intensive enterprises?

In the same way, the second research subquestion - what distinctive properties characterise corporate strategy systems in knowledge-intensive enterprises? - has been answered by the following set of corporate strategy system properties: strategy format; planning rhythm; time horizon consistency; corporate strategy orientation; corporate planning formalization; organisational integration; role of corporate central planning unit; processes blueprint; decision making flow; people involvement; management responsibility; planning capability; absorptive capacity; and change climate. The following external environment properties and internal environment properties – which are the answer to the research subquestion: what distinctive properties characterise contexts of knowledge-intensive enterprises? – have been identified:

- *External environment*: environmental change pattern; competitive complexity; stakeholder integration; and value web position.
- *Internal environment*: corporate maturity; value proposition; resources advancement; units of activity diversity; collaborative structure; growth horizon; and adaptive strength.

Many of the context and system properties have been modelled using a matrix format determining a number of possible property values. For example, the 'strategy format' property can have the values: mental model; direction statement and detailed plan. In a context example, the 'environmental change pattern' can be stable, dynamic, volatile and turbulent.

These CSS functions, processes and properties together represent a conceptual framework through which corporate strategy systems can be analysed and through which knowledge-intensive enterprises can be distinguished from one another. This classification scheme is a conceptual framework that helps to bring a better understanding in the corporate strategy practices of knowledge-intensive enterprises. It helps to see where the similarities and where the differences lie between different knowledge-intensive enterprises.

The second phase of the configuration building process has used these building blocks and focussed on specifying the typical contexts and the description of the configurations of building blocks fitting within each typical context. The aim of this step was to answer the initial research subquestion: what are the types of contexts in knowledge-intensive enterprises and what patterns of corporate strategy system properties can be identified in each of these typical contexts? Grounded in the empirical data of the case studies, the result of this step has been the definition of the following typical contexts and according configurations of corporate strategy systems: Informal Shaper; Catalysing Builder; Power Positioner; Centralised Composer; Synergising Coordinator; and Emergent Evolver.

The *Informal Shaper* can be found in the typical context of entrepreneurial KIE being formed, where the CSS can be described as 'informal strategising'. The providing purpose function is the primary function of the CSS in this context, i.e. providing the enterprise with a meaning and a global sense of direction. Furthermore, the main role of the corporate centre, which in the Informal Shaper is typical the entrepreneur and his/her management team, is to lead people and integrating the organisation into a unified whole. The corporate strategy system is furthermore characterised by a lack of formal organisational arrangements and poor planning capabilities.

The *Catalysing Builder* configuration can be found in the context of fast growing, advancing KIE, where the CSS can be characterised as a 'catalyst for change'. The primary CSS function in this context is building resources, i.e. selecting, developing and leveraging strategic resources. Furthermore, the corporate strategy system is characterised by a time bridge orientation and quick adaptation processes. The main role of the corporate centre, which in this context typically is the management team, is to catalyse the change processes of the corporation and its units of activity.

The *Power Positioner* type can be found in the context of a KIE dealing with competitive forces. The CSS can be characterised as 'compromise finding', and its main function is to position competitively, i.e. determining a sustainable competitive position of the enterprise in its environment. The main role of the corporate centre, which involves a central planning team and a corporate wide committee, is to resolve conflicts (like mediators, diplomats) and aligning the development of the units of activity. The CSS is further shaped by formalised planning procedures, a mixed decision-making flow (top down & bottom up forces) and a planning committee. This configuration is highly 'planning-intensive'.

The *Centralised Composer* configuration represents the typical context of a diversified, multi-business KIE. The CSS acts as a central control centre and the primary function is the composition of businesses, i.e. composing a balanced selection of businesses (or units of economic activity. The corporate centre has a (large) formal planning department and their main role is to control the different units of activity and directing their development. The corporate strategy system is shaped by a strong quantitative focus and well established, strong performance management processes.

The *Synergising Coordinator* type is the typical context of a KIE with collaborating and synergetic units. The CSS acts as 'a facilitator' of the strategic planning processes. The main function of the CSS is to coordinate the units of activity (and their development) of the enterprise. The corporate centre, which typically is a small planning team, has the main role to support and facilitate the units of activity in corporate strategy processes. Furthermore, the CSS is characterised by a distributed commitment of decision making.

The *Emergent Evolver* configuration represents the context of loose networked KIE, where the CSS are characterised as 'self organising' platforms. The CSS main function is to optimise the corporate evolutionary process by preparing for and dealing with unanticipated events. This context is 'planning-light', or in other words, highly distributed. The main role of the centre of the network, which typically involves a small management team, is to provide a platform for communication among the units of activity. This configuration is characterised by the importance of self organisation and bottom up decision making processes.

These six configurations are described in more detail in chapter 7 and the schematic structure of the properties for each configuration is displayed in appendix D. The so constructed typology ('conceptual configurations') is the prime result of this research. Its fundamental structure bases on four sets of propositions that determine the main relationships between context, CSS function, corporate centre role and determining properties of each configuration. The conceptual configurations are our suggested types of corporate strategy systems in knowledge-intensive enterprises. The set of conceptual configurations taken together represents the population of knowledge-intensive enterprises. In other words, these six 'archetypes' provide a conceptual framework for understanding the complete population of knowledge-intensive enterprises and the nature of their corporate strategy systems. With this typology the main aim of this thesis – to provide increased insight in the corporate strategy systems practice in knowledge-intensive enterprises – has been addressed.

Curriculum Vitae

Jeroen Kemp was born on June 13th 1975 in Rotterdam. After finishing the Stedelijk Gymnasium in Leiden in 1993, he studied Business Economics and Information Management at the Erasmus University in Rotterdam. During his studies Jeroen participated in two one-year intensive programmes ("'werkcolleges"), one on innovation management and one on information systems. He has participated in a research project on knowledge management in the USA and did an internship in Germany at the Fraunhofer Institute. In 1999, Jeroen graduated from both his studies with a thesis on *"Fractal Organising of Knowledge-Intensive Organisations"* that received a cum laude grade.

After his study, Jeroen has moved to Stuttgart to work at the *Fraunhofer Institut für Arbeitswirtschaft und Organisation* (IAO), where he is now a senior researcher and consultant in the fields of strategic management and innovation. He has managed numerous German and international research and consulting projects related to such topics as knowledge management, new product development and strategic planning. For example, Jeroen has been the scientific coordinator of the *European Knowledge Management Forum*. This European Commission IST project has resulted in the *KnowledgeBoard* (www.knowledgeboard.com), which has become Europe's leading community on Knowledge Management & Innovation. Jeroen has also been the Manager of a three-year R&D project in the IMS (Intelligent Manufacturing Systems) Programme with 30 participating organisations worldwide, called *Symphony*. The project aimed to develop strategic management solutions for small and medium-sized enterprises (SME), with a main focus on adaptive, knowledge-based and networked enterprises. The project has among others resulted in the *StrategyGarden* strategic planning toolset (www.strategy-garden.net) for fast growth enterprises.

At Fraunhofer Jeroen is the founder and head of the *centre for corporate development* (www.zue.iao.fraunhofer.de), which is its consulting centre for strategic planning and organisation design in high-tech enterprises. Jeroen has worked as a consultant in various industries, such as automotive, aerospace, ICT, engineering and other high-techs. He has working experience in Europe, North- & South-America, Australia and Asia.

In parallel to this work at Fraunhofer, Jeroen has conducted his PhD Thesis at the *Eindhoven Centre for Innovation Studies* (ECIS) at the Faculty of Technology Management from the Eindhoven University of Technology.

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