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Exploitation of Capabilities and Opportunities When Exploring
Strategic Alternatives in R&D:
Case Company

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ABSTRACT

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The main objective of the Thesis is to analyze the Case Company and to construct strategic suggestions to stay competitive. The focus is on exploitation of capabilities and opportunities. Additionally, the Thesis investigates whether the efficiency of utilized resources could be improved further. The strategic suggestions and opportunities for improvement are meant to be beneficial also for the parent company.

The Thesis is based on a qualitative research approach. The successful research and development history with major technological shifts in the dynamic industry lay the foundation for this exploratory case study. The theoretical framework was obtained by relevant articles, books and studies. The empirical information was gained through interviews, observations and experiences of my own. The analytical framework comprises external and internal strategic evaluations. Analysis results include organizational strengths and weaknesses, industry specific and social opportunities, and threats. Strategic suggestions are formulated by exploring the most feasible strategic alternatives created. Opportunities for improvements are built for main weaknesses.

The results of this study show that the Case Company needs a strategy. It would motivate employees and increase entrepreneurship skills, in addition to specifying the long-term direction. The deployed bottom-up operative approach exploits knowledge of experts and develops organizational capabilities for the purposes of strategic management. According to the findings, the Case Company would be able to gain competitive advantages, for example, via service differentiation and customer collaboration. Furthermore, the management team would need relational capabilities and the role of human resource management could be emphasized.

Chapters are not published in their full length in the Library version, since the information in them is classified as confidential.

Keywords: strategic management, organizational capability

ABBREVIATIONS

2G	2 nd Generation Mobile System (usually GSM)
3G	3 rd Generation Mobile System (usually UMTS/WCDMA)
3GPP	3 rd Generation Partnership Project
ATM	Asynchronous Transfer Mode
BI	Business Intelligence
CI	Competitive Intelligence
EU	European Union
GSM	Global System for Mobile Communications, Groupe Spécial Mobile
HR	Human Resource
IMS	IP Multimedia Subsystem
IP	Internet Protocol
ISDN	Integrated Services Digital Network
MBA	Master of Business Administration
PLMN	Public Land Mobile Network
PSTN	Public Switched Telephone Network
QoS	Quality of Service
R&D	Research and Development
ROI	Return on Investment
SWOT	Strengths, Weaknesses, Opportunities and Threats
TDM	Time Division Multiplexing
UMTS	Universal Mobile Telecommunications System
VoIP	Voice over IP
WCDMA	Wideband Code Division Multiple Access

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1 INTRODUCTION

The motivation and background, as well as the research objectives of this Thesis are described in the sections below. The research questions are introduced from the point of view of their benefits and substance to the research objectives. Principal findings are presented, as well as the applied research methodology and limitations. The structure of the Thesis is introduced briefly, too.

1.1 Motivation and Background

It is important to be able to position an organization based on its manoeuvres and capabilities in the current competitive business environment. The Case Company is a hi-tech and product development enterprise in a global corporation. Its products are designed to work in mobile networks. The impact of the Internet and fast mobile networks is accelerating the evolution towards packet switched Internet Protocol Multimedia Sub-system, IMS, based multimedia services (3GPP 2006, 4-8; 3GAmericas 2009, 7-10, 12-13). The central question is how the Case Company would be able to sustain its credibility and competitiveness among other R&D, Research and Development, companies. According to my knowledge, this type of investigation has not been executed in a thorough and scientific way at the Case Company.

No gap can be identified from the previous research. However, no single research article, study or book alone covers completely the research area of this Thesis. Therefore, I use a number of different sources in the literature review to comprise the theoretical framework. Applicability of the existing literature in the area of organizational capability and opportunity exploitation for the purposes of creating strategic alternatives in R&D is verified within the Thesis.

1.2 Research Objectives, Research Questions and Main Findings

The main objective of the Thesis is to explore the Case Company and to provide the head of the organization with strategic alternatives and a development plan how to stay competitive and become a preferred partner. The Thesis investigates how effectively the organizational capabilities and external opportunities are exploited. The main perspective is strategic management, but also the operative dimension is analyzed. The

outcome of the Thesis contains both strategic suggestions and opportunities for improvement. By utilizing the outcomes, one is able to validate the degree of applicability of existing literature, from the point of view of the research objectives of the Thesis.

The first research question relates to the strategic management and competitive advantages gained, including intangible resources, such as copy rights, patents, reputation and networks. Interviews, observations and my own experiences are exploited.

1. *What strategic actions has the R&D function accomplished since the 1990s to achieve major product responsibilities?*

The second research question considers strategic analysis from the point of view of the business environment and competitive intelligence.

2. *What are the effects of the ongoing evolution towards all-IP and packet switched data on the Case Company?*

The third research question concentrates on strengths and weaknesses in the SWOT-analysis, Strengths, Weaknesses, Opportunities and Threats. It relates to the capability and knowledge management function. Literature analyses, interviews, observations and experiences of my own are utilized.

3. *How to manage strategic planning at the Case Company in an effective way? How the existing capabilities could be managed to create new knowledge, added value and sustainable competitive advantages?*

One of the main findings is that the Case Company does not have a strategy. However, the deployment of the team-based culture can be considered to be a reactive sign of strategic decisions, yet without the long-term direction. The Case Company is an expert organization, possessing excellent production, delivery and process improvement capabilities. Teams exploit knowledge from each other and develop organizational capabilities. The role of line management could be re-evaluated, in favor of strengthened human resource management. Increasing efficiency requirements imply professionally constructed motivation and empowerment elements. Previously gained relational and even networking capabilities cannot be identified widely any longer. This issue should be on the agenda of the management team. According to the findings, the

Case Company would be able to gain competitive advantages, for example, via service differentiation and customer collaboration. Networking with customers could increase both efficiency and motivation. The management should be able to make strategic decisions by applying external and internal signals, in addition to organizational capabilities. External signals originate from the competition and the business environment. Internally, organization wide contributions would be important. The CI-analysis, Competitive Intelligence, confirms that the evolution into packet switched technology would offer an opportunity and another strategic element.

1.3 Research Methodology and Limitations of Study

The Thesis is based on a qualitative research approach and a case study method. The research contains both theoretical and case company specific parts. Literature reviews provided me with the theoretical framework needed for the Thesis. Case company specific qualitative data collection was carried out by interviews. Also observations and experiences of my own were used in the data collection and analysis. The Thesis is practical improvement and development oriented (Ghauri 2004, 109; Yin 2003, 13-15). The research methodology is described more thoroughly in Chapter 4.

The research objectives are studied by concentrating on the functions of the Case Company within one country. The organizational capability related perspective is extended till the beginning of the 1990s when the GSM, Global System for Mobile Communications, and the evolution of digital mobile telephony started off. That is to say, the Thesis considers also the heritage of the Case Company. Barney (1991, 107-108, 115) emphasizes the significance of historical merits in gaining sustainable competitive advantages. Analyses of different capability types (Wahlroos 2010, 32-56) are excluded from the Thesis. The focus is on strategic capabilities of the Case Company, in relation to capability development model by Möller and Törrönen (2000, 9-11) in Section 2.3. Validity aspects concerning previous research are considered while verifying the applicability of existing research literature from the point of view of the Objectives of the Thesis.

1.4 Structure of Thesis

Figure 1 describes the structure of the Thesis. Relevant literature reviews are performed within Chapter 2. They construct the theoretical framework for the Thesis. Chapter 3 introduces the phases for the analytical framework. The qualitative research approach, the case study method with its techniques used for the case company, as well as data collection and analysis methods are described in the Research Methodology chapter. The Case Company is introduced and case evidences are discussed and analyzed in Chapter 5. External and internal strategic evaluations are executed and summarized, according to the stages defined in the Analytical Framework chapter. The research questions are answered by combining theory and competitive intelligence analysis results with the facts and opinions of interviewees, as well as experiences of my own. Furthermore, strategic suggestions are explored and opportunities for improvements are given for the case company in Chapter 5. Within the Conclusions chapter I summarize the background of the Thesis, highlight relations to previous studies, and discuss briefly the main findings. Additionally, further study items are suggested.

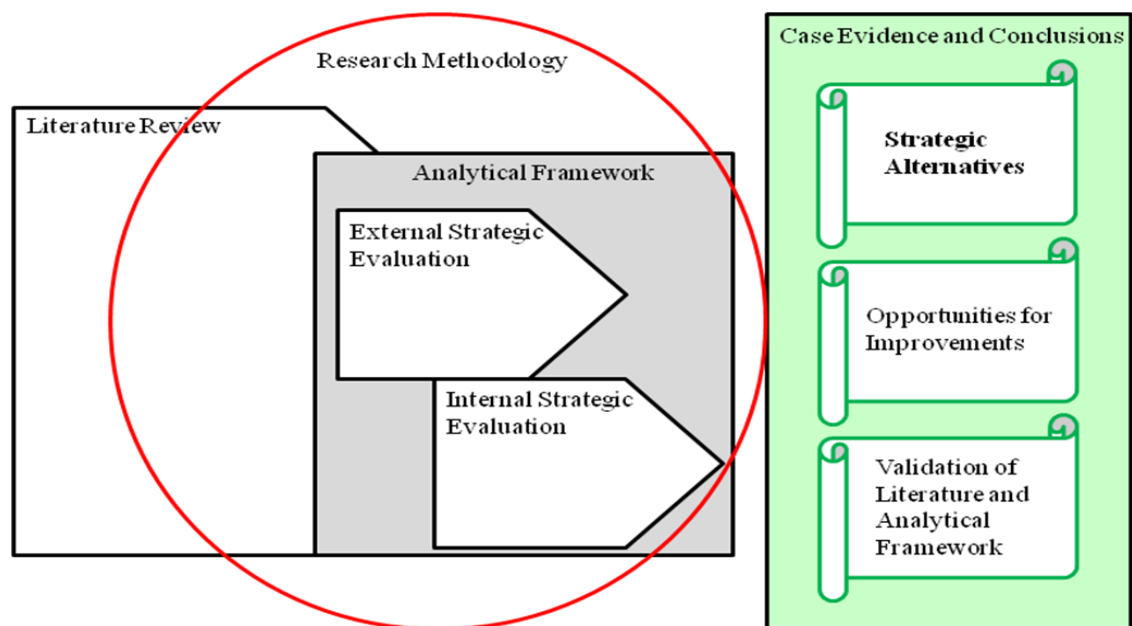


Figure 1. Structure of Thesis

2 LITERATURE REVIEW

Essential terms, concepts, models and facts concerning relevant strategic management related subjects are introduced hereunder. First, strategic management and strategies in general are enlightened. Articles in the area of strategic management and the ongoing evolution in R&D are also utilized. The strategic management section is followed by Porter's (2004) three generic strategies, the competitor analysis area and the role of intangible resources, in sub-sections of their own. Knowledge and organizational capabilities are discussed in the second main section. The third Literature Review main section considers a capability development model and networking capabilities. The capability development model is crucial when analyzing capabilities of the Case Company. These analyses give frames for strategic alternatives. In the final main section, self-organizing teams are included to a relevant degree.

The carefully chosen items of the previous research are important elements to build this Thesis on, from the point of view of the research objectives. The information in the Literature Review is utilized in the external and internal strategic evaluations, as well as during the creation and formulation of strategic suggestions and opportunities for improvement. The assumption regarding generic strategy formulation processes is that they are similar in every company. The ongoing strategic debate argues whether strategies should be based on market positions or resources of a company (Bergfors 2007, 35). My Thesis combines those two sides by focusing both on opportunities in the business environment and strengths, organizational capabilities and resources at the Case Company.

2.1 Strategic Management

Strategic management is in a central position in this Thesis. Since the objective of the Thesis is neither to create strategies nor to make strategic decisions for the Case Company, the head of the organization needs to know the utilized strategic process and its underlying elements. The important aspects of this area are, for example, why strategies are used in companies and how they are formed and enhanced. Additionally, I have included aspects regarding the role of a strategy from the point of view of a management, an employee and an organizational structure. The difference between operational excellence and a strategy is considered, too. Intangible resources,

competitor and business environment analyses in strategic management are discussed in separate sub-sections. I introduce only the fundamental cornerstones that are required to understand strategy formulation processes. The purpose is not to cover the topic strategic management totally and in details.

Generally, a company strategy defines how an added value is planned to be produced to customers and shareholders. Continuous, specific capability improvements and alignments with customer needs are crucial. (Kaplan & Norton 2004, 4, 30, 52.) When the competition and business environment are dynamic, existing organizational capabilities form a stable foundation for a strategy (Grant 1996, 375-376, 384). Telecom and technology sectors are prominently dynamic, which is reflected also to R&D activities. Mintzberg, Ahlstrand and Lampel (2005, 45) emphasize that a strategy is an engagement between external opportunities and internal strengths, including resources and capabilities. Kaplan and Norton (2008, 1), and Grant (1996, 375-376) put stress on a strategic long-term direction. Many firms prefer to concentrate on increasing operational excellence and making operative adjustments in a reactive manner (Porter 2004, x, xv-xvi). Operational excellence may decrease costs, improve quality and shorten lead times, but only a strategy can lead to sustainable success (Kaplan & Norton 2008, 1; Mintzberg et al. 2005, 15-18). By focusing on operational excellence, risks to ignore the business environment and competitors increase. All companies, even pure R&D firms that compete, should have a competition-adjusted strategy. (Porter 2004, xv-xvi, xxi-xxv.) R&D specific strategies contain capability improvements, organizational changes and cultural programs, in addition to development activities (Manoski 2002). An R&D strategy, with technological capabilities and new business opportunities, is an essential input to a business strategy of a corporation (Larsson 2004, 7, 17-18).

Kaplan and Norton (2008, 8) suggest that a strategy formulation process starts with a vision, mission and values. Secondly, a SWOT-analysis is performed. Opportunities and threats are external, business environment related factors, while strengths and weaknesses are company internal. Then, Porter's (2004, 3-5) five competitive forces are diagnosed. Finally, one can draw a resource- and capability-based view of a strategy. (Kaplan & Norton 2008, 8, 35-42, 45-66.) Competition is indicated to be driven by five competitive forces: competitors, buyers, suppliers, substitutes and potential new entrants. Those forces are important for industry and competitor analyses purposes when defining strategies. (Porter 2004, 3-5.) Companies with visible and formal

strategy formulation processes outperform their reference firms in 70 % of the cases (Kaplan & Norton 2008, 4-5).

Derived from the previous facts, I am able to state that carefully created strategies lead to competitive advantages. In this Thesis, a combination of strategy formulation steps and other vital elements of strategic management that are described above are utilized. Business environment and competitor analyses are crucial for determining opportunities and threats. Internal strengths and weaknesses are obtained through interviews and own experiences. A SWOT-analysis has an important role in strategic management. Generic strategies are described briefly in Section 2.1.1. Competitor analyses, Business Intelligence, BI, and Competitive Intelligence are introduced in the Competitor Analysis section. Section 2.1.3 includes intangible resources, which are significant elements of organizational capabilities.

2.1.1 Generic Strategies

Porter (2004, 34-41) introduces three generic strategies to choose between when making decisions upon main strategies. I utilize the information included in this sub-section when analyzing the Case Company and formulating strategic alternatives. Competitive advantages via different generic strategies are illustrated in Figure 2. Overall cost leadership requires, for example, minimized R&D costs. However, low costs alone cannot be the factor for reaching a sustainable strategy (Porter 2004, 148). The second generic strategy, differentiation, serves brand loyalty by decreasing price sensitivity and increasing market attention vis-à-vis substitutes. Products and services in this group are found unique by customers and the strategic targets are usually industry-wide. The third generic strategy, focus, concentrates on certain customers and product areas. Strategic targets focus on a certain segment, while strategic advantages focus on reaching either a low-cost or unique market position. A focus-concentrated strategy requires a set of capabilities and resources that are used in cost leadership and differentiation strategies. When a company is not able to determine its strategy among the three generic ones, it will be stuck in the middle. (Porter 2004, 34-46.) Figure 2 depicts Porter's (2004) three generic strategies.

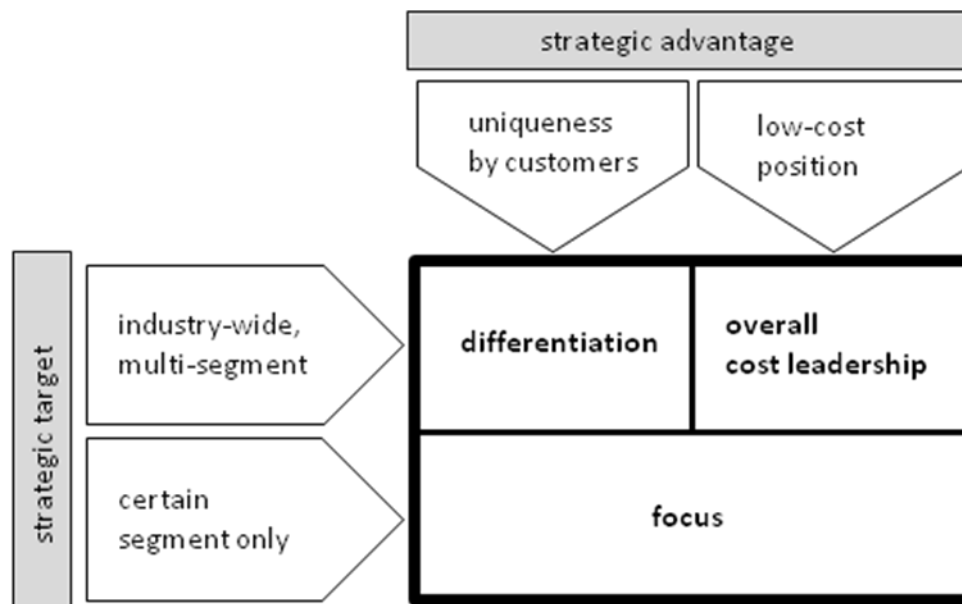


Figure 2. Generic Strategies (Porter 2004)

Porter (2004, 300) suggests that vertical integration is a combination of technologically distinct production, delivery, sales and other economic processes inside one company. The foreseeable benefits are an improved return on investment, ROI, due to integrated operations, cost savings in internal control and coordination functions, as well as economies of information creation and stable collaboration relations. Separate vertical phases require specific management capabilities. (Porter 2004, 300-305, 319-320, 322-323.) R&D strategies with both vertical and horizontal collaboration elements are stronger than pure vertically or pure horizontally built (Carayannis & Alexander 2004, 226-228, 230-231). In this Thesis vertical integration is assumed to be an essential element towards a strategic differentiation. The strategic position of the Case Company is analyzed in Section 5.1.3, as part of external strategic evaluations.

2.1.2 Competitor Analysis

Industry competitors, one of the Porter's (2004) five competitive forces, require more precise attention, due to its significance in the Thesis. Competitor analyses are essential for understanding capabilities of one's own. Future goals, current strategies and assumptions belong to the analysis components, too. Market and product information at competitor Internet sites is useful. By analyzing competitors' selective information announcements, one is able to notice also the level of analyses that competitors have carried out. (Porter 2004, 17-23, 47-107, 138-141.)

Hannula and Pirttimäki (2003, 593-594) suggest that Business Intelligence is a systematic strategic decision making process, leveraging information from customer and competitor relations to technological and environmental aspects. The reasons for kicking off BI-activities relate mainly to the need for quality strategic and operative decisions. Management teams must have capabilities to translate business information into knowledge and strategic actions, which is essential in order to stay competitive. (Hannula & Pirttimäki 2003, 593-596.)

Peltoniemi and Vuori (2005, 2) refer to Competitive Intelligence as a competitor information gathering process, where the data are used for strategic planning purposes. Only a few companies utilize this type of information in a systematic way (Porter 2004, 48, 71-74). CI has positive effects on organizations. It accelerates decision making processes and produces effective business environment adaptation abilities. (Peltoniemi & Vuori 2005, 2-4.) According to Wright (2005, 1-3), CI started gaining more attention in Finland after the recession at the beginning of the 1990s and since the European Union, EU, membership in 1995. The driving sectors have been information technology and telecom, especially Nokia. CI is widely accepted in Finland and it is used for long-term strategic purposes, in order to secure more solid ROI. (Wright 2005, 1-2.)

This Thesis utilizes CI when analyzing strategies concerning products of four major equipment manufacturers. The analyses are executed in Section 5.1.2. The results include external opportunities, among other things.

2.1.3 Intangible Resources

Intangible resources are divided into assets and skills. Assets, for example, patents, contracts and reputation, are owned. Intangible skills hold, for instance, knowledge of employees and knowledge acquired via networks. The three most important intangible resources are company reputation, product reputation and employee knowledge. Networks of a company are the fifth most important aspect. To obtain reputation is time-consuming, but it can be lost quickly. (Hall 1992, 137-138, 141.) Kaplan's and Norton's (2004, 13-14, 202-203) intangible resources include also organizational culture, leadership, knowledge management and teamwork. The more effectively intangible resources are aligned with tangible assets and strategies, the higher their

value is. About 70 % of companies align only culture, leadership and teamwork with their strategies. (Kaplan & Norton 2004, 4-5, 10-14, 29-32, 49-52, 199-203, 211-213.)

When a value-creating strategy is not imitable by competitors, a company has a sustainable competitive advantage over its competitors. Determinants are organizational capabilities to exploit opportunities and neutralize threats. (Barney 1991, 102, 105-106.) Four types of sustainable competitive advantages exist: functional, positional, cultural and regulatory. Functional differentiation is based on knowledge and skills of employees and organizational capabilities, which area is explored in Section 2.2. Cultural differentiation relates to the values and attitudes of an organization. Positional differences rise, for example, from good customer reputation. Regulatory differentiation is a result of legal entities, such as contracts and property rights. (Hall 1992, 135-136.)

In this Thesis the most interesting intangible resources to be investigated are reputation, employee knowledge and networks of the case company. The assumption is that reputation, organizational capabilities via individual knowledge and networks have been obtained during the 20 years of digital mobile telephony history. Another assumption is that those resources are available in the Case Company. The strategic interest in intangible resources relates to the organizational capability to observe and exploit them. The strength factor in a SWOT-table comprises organizational capabilities and resources, both tangible and intangible (Mintzberg et al. 2005, 15-18). The analyses of intangible resources and capabilities of the Case Company are executed within the Internal Strategic Evaluation section.

2.2 Knowledge and Organizational Capabilities

The knowledge of employees is one of the most important intangible resources in a company (Hall 1992, 137-138), as indicated in Section 2.1.3. The term competence consists of both knowledge and skills. Knowledge provides one with an understanding, via education and experiences. A skill is knowledge of how to do something efficiently. (Kaplan & Norton 2008, 151-152.) Wahlroos (2010, 32) cites Richardson (1972, 888) when proposing that capabilities contain knowledge, experience and skills. By combining the previously mentioned definitions, a capability includes both a competence and an experience component. Grant (1996, 375-376) suggests that dynamic competition is the main reason why organizational capabilities are more

essential strategic foundations than characteristics of target markets. The crucial organizational capability is to create new knowledge by integrating knowledge of individuals (Wahlroos 2010, 36, 60; Grant 1996, 375-377, 380-382, 384-385). Grant (1996, 377, 385) emphasizes the role of tacit knowledge in production related tasks. Cui and Hertz (2011, 1006) cite Prahalad and Hamel (1990, 1, 4) when equating the terms core competence and core capability in the context of an organizational strategic capability. A core competence, or an organizational strategic capability, leads to a competitive advantage, considers different types of businesses and is difficult to imitate (Prahalad 1993, 45). To summarize the discussions above, an organizational capability can be seen as an enabler to combine and exploit explicit and tacit knowledge areas.

One of the fundamental elements in strategic management is learning, as touched upon in the previous sections. Competence improvements require equal investments in technology, management and common learning (Prahalad 1993, 45-46). According to Mintzberg et al. (2005, 229), learning is an absolute necessity in expert organizations and a learning process requires knowledge as a fuel to start up. Prahalad and Hamel (1990, 6, 14) and Mintzberg et al. (2005, 231) propose that a strategy is dependent on learning and learning depends on capabilities. Management teams should be able to see business as a portfolio of resources and capabilities instead of a collection of products, objects and organizational entities (Prahalad & Hamel 1990, 6, 14). Nonaka (1994, 14-18, 21-22) and Prahalad (1993, 45) add that knowledge is created in a dialogue between explicit and tacit knowledge areas, and that individual employees are key contributors.

Nonaka (1994, 18-21) introduces a spiral of knowledge creation and organizational learning. It starts from team-level sharing of tacit knowledge to conversion into formal, explicit format. Then, formal knowledge of teams and employees is combined with each other. Finally, organizational formal knowledge is transformed into tacit form during a learning process of an individual. (Nonaka 1994, 18-21, 34.) When the spiral of knowledge creation is combined with skills, one can talk about an organizational capability. The combination of knowledge and skills occur via business actions. When both new knowledge and new skills are created, organizational capabilities will improve. Strategic capabilities concentrate on extending and/or renewing organizational functions, whilst operative ones develop and/or improve them. (Wahlroos 2010, 60-64.) Competitive advantages are dependent on organizational abilities to utilize and integrate knowledge of individuals. Sustainable competitive advantages require continuous

innovations and expansion of existing capabilities via creation of new knowledge. (Grant 1996, 380, 382, 384-385.) Management capabilities to create relevant knowledge by leveraging existing resources are essential (Prahalad & Hamel 1990, 4-6; Prahalad 1993, 41-42; Nonaka 1994, 32-33; Grant 1996, 375-376).

In the first paragraph of this section, an organizational capability is considered as an enabler to combine and exploit explicit and tacit knowledge areas. This definition is static, without a functional perspective. Dynamics is achieved by incorporating skills into knowledge, that is, by learning efficiency during business activities (Wahlroos 2010, 60-64). In this Thesis the term 'organizational capability' refers to a collective ability to develop the usage of resources for reaching strategic targets by exploiting knowledge and experiences of individuals.

2.3 Capability Development Model and Networking Capabilities

This Thesis assumes networking capabilities to be critical, in order for the Case Company to stay competitive. The main point is the added value to the parent company. The reason to discuss the capability development model and networking capabilities outside the Knowledge and Organizational Capabilities section is to emphasize the importance of the issue. Section 2.2 describes capability related subjects, such as knowledge, skills, competence and experience, at a general level and concentrates on defining the term 'organizational capability'.

Möller and Törrönen (2000, 9) introduce a capability development model, with value production types in supplier-customer relations. The relations and added-values are illustrated in Figure 3. Manageability and attainability aspects of the capabilities decline from left to right. For example, the business partnering capability is the most difficult one to get and the most complex one to manage. Previously obtained capabilities are needed as a platform to jump into the next level. Generally, a set of capabilities is required to produce any value. When capabilities of a supplier complement the ones at a customer side, the higher the probability to create value and new knowledge will be. Company management is in an essential role when moving from the core value additions to higher level value production areas. (Möller & Törrönen 2000, 9-11.)

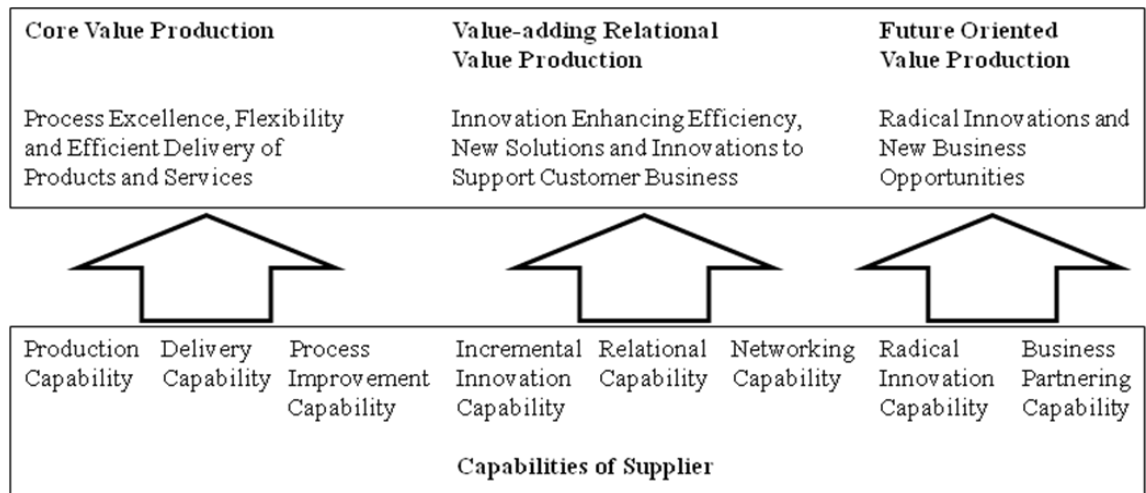


Figure 3. Capability Development Model (Möller & Törrönen 2000)

Möller and Törrönen (2000, 10-12) suggest that capability levels are indicated in a concrete way. For example, the relational capability requires employees with technical and team working skills, willingness to share knowledge and to develop customers' business, as well as at least partially integrated information technology systems (Möller & Törrönen 2000, 11; Nobelius 2004, 4). Relational and networking capabilities can be promoted, for example, in development projects between suppliers and customers (Wahlroos 2010, 152-154, 198-200; Grant 1996, 383, 385). This is essential, since customer needs are often inside the tacit knowledge area and cannot be explicitly interpreted. Unwanted requirement implementation and customer trial iterations can be avoided. (Nonaka 1994, 27.) Barney (1999, 140, 144) adds one important advantage, faster time-to-market.

A company management has to be able to understand the trends in the business environment and to make focused resource allocations. Signals via activities between network actors are invaluable in this function, even indirect ones. (Ritter & Wilkinson & Johnston 2003, 178-181.) Wahlroos (2010, 70-71) emphasizes the effects of strategic capabilities of a management to a company's position within its networks. Managers' experiences and knowledge are important. According to Sawhney and Parikh (2001, 80), the intelligence of a network is its ability to distribute, store, create and modify knowledge. In the knowledge economy the role of all intangible resources is essential when aiming at a sustainable competitive advantage (Allee 2000, 1-2, 6; Wahlroos 2010, 41-42, 57). A company without networking capabilities has static and only local relevance (Sawhney & Parikh 2001, 81-84).

This paragraph comprises evolutionary characteristics of R&D efficiency and strategic management. According to Nobelius (2004, 1-3), the focus areas in the R&D management evolution move from products and projects towards collaboration and multi-technology research networks. Vertical integration, cross-functional and virtual teams, speed, radical innovations and control of interactions lead to competitive advantages. Research is expected to be separated from R&D during the evolution. Products and services consist of many specialized modules, which are developed by experts from different companies and from different networks. Strategic management of R&D becomes more complex, since the number of technologies and players gets higher. (Nobelius 2004, 2-7.) Sawhney and Parikh (2001, 81-84) support the interaction management view. Vertical integration is discussed in Section 2.1.1, cross-functional and self-organizing teams in Section 2.4. Innovation and networking are dealt together with the capability development model previously in this section, as well as speed, time-to-market. The anticipated separation of research from the marriage R&D is excluded from the Thesis, due to its current irrelevance, from the point of view of the objectives.

2.4 Self-organizing Teams

The reason to introduce self-organizing teams accompanies the recently deployed team culture in the Case Company. The analysis of their relation to strategic and operative management components is essential in order to support the objectives of this Thesis.

Self-organizing, -managing and cross-functional teams described by Nonaka (1994, 22-25) are effective in creating new knowledge via experiences. One team has a common target and team members trust each other. This way of working resembles the bottom-up management model, in which team members can be seen as entrepreneurs. Networking, which was discussed in the previous section, is also based on a bottom-up approach. (Nonaka 1994, 22-25, 30-32.) If a company is dependent on quality products, self-organizing teams will be the operative answer. Team members control one another. Anything that is missing from a team is handled either by the team itself or via escalations. No additional management control function exists in the operative side of product development. (Schwaber & Sutherland 2011, 5-6, 12-15.) Pearce and Robinson (2011, 18-19, 24) suggest that the control is replaced by support and co-operation. Organizational structures are to be aligned with strategies (Bergfors 2007, 32) and

organizational capabilities (Pearce & Robinson 2011, 18-19; Grant 1996, 378-379, 381, 385). A deployment of cross-functional and self-organizing development teams is a sign to change organizational structures (Grant 1996, 382). The research study results from different sources above form a solid base for efficiency- and effectivity-oriented strategies and operative activities.

Caluwé and Vermaak (2003, 55) introduce a white-print change management method to be used when teams are self-organized and –managed. The white-print approach means openness and self-organization. The focus is on individual strengths and creating new. Self-management is a source for sustainable progress and continuous development. Outcomes cannot be predicted at an early stage of a process, that is, no pre-defined project goals exist. Networking is an important dimension of the working culture. Open-space collective meetings are used commonly to spread information, discuss improvements and make generic decisions. Team specific logos and slogans are used to raise spirit. (Caluwé & Vermaak 2003, 39-40, 44-45, 49-55.) The suggestions above introduce more details to be considered when deploying self-organizing teams.

3 ANALYTICAL FRAMEWORK

This Thesis concentrates on assessing the existing strategy at the Case Company, constructing and introducing strategic suggestions and opportunities for improvement. The objective is not to create a new strategy. Nevertheless, the assessment is not possible without utilizing a formal strategy formulation process. It is essential to start from upper level strategic fundamentals and business environmental variables and continue to the Case Company level. That is, the Case Company has to support the strategy of corporation, with a special emphasis of its own. Both Kaplan's and Norton's (2008, 8, 35-42, 45-57, 59-66) and Porter's (2004, xxvii-xxviii) process suggestions are considered during analyses. The relevant information within the Literature Review chapter of this Thesis is applied while structuring the analytical framework.

The analytical framework consists of four main phases. An external strategic evaluation is followed by an internal evaluation stage. Third, strategic suggestions are explored and formulated by concentrating on the exploitation of strengths and opportunities. The strengths rely on the organizational capabilities and resources. During the fourth phase, internal weaknesses are transformed into opportunities for improvement. Figure 4 illustrates the four phases of the analytical framework. The contents of each phase are described in the separate sections below.

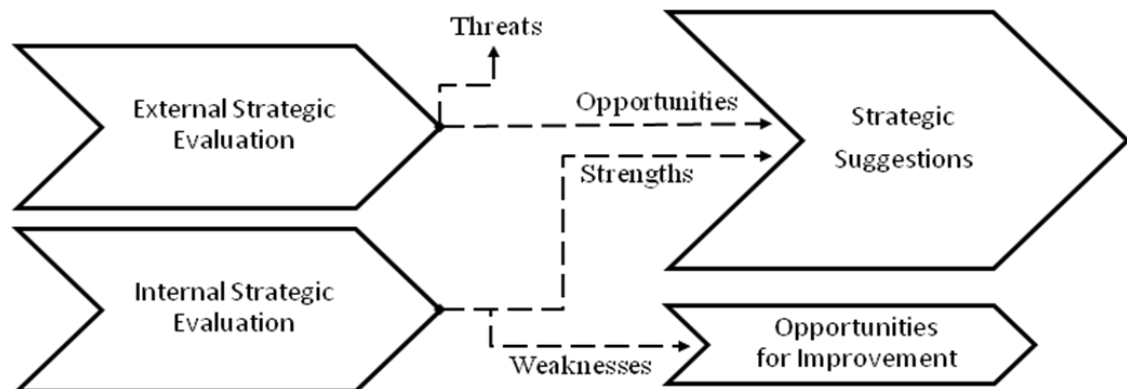


Figure 4: Analytical Framework

3.1 External Strategic Evaluation

The external strategic evaluation phase consists of three sub-processes. First, a generic strategy formulation model is introduced (Porter 2004, xxv-xxviii). Competitor analyses

are executed at the parent and Case Company levels. Also competitors' degrees of preparedness against the technological evolution stage are analyzed and the product life cycle phase of current products is investigated. The second sub-process provides me with the majority of opportunities and threats for the case study. Finally, the three generic strategies (Porter 2004, 35-40) are entered in order to determine the most appropriate one for the Case Company. However, first of all a competitive environment, from the point of view of technology, is introduced.

3.2 Internal Strategic Evaluation

The parent company and the Case Company are introduced. Analyses are continued and extended to the Case Company specific parts by adapting previous discussions in the Thesis and intertwining them with interview results and my own experiences. Research data are analyzed further in three phases. First, strategic management at different organizational levels is discussed. The emphasis is on strategic management through the value chain, that is, from the parent company level to the Case Company. Second, Case Company specific strengths and weaknesses from the interviews and experiences of my own are introduced. Following these phases, the SWOT-analysis and confrontation matrix are exploited in order to create strategic alternatives.

3.3 Strategic Suggestions

The most relevant strategic suggestions are introduced during the third phase of the analytical framework. It is explored whether the existing organizational capabilities are exploited. Strategic main alternatives are built on existing internal strengths and a certain set of the opportunities. The strength component includes both capabilities in the context of value-based production (Möller & Törrönen 2000) and resources, tangible and intangible, that the Case Company has evolved since the 1990s.

3.4 Opportunities for Improvement

Opportunities for improvement comprise proposals on strategic and operative management issues. The biggest Case Company specific internal weaknesses are transformed into opportunities, from the negative area into positive. The weaknesses are obtained via interviews and experiences of my own.

4 RESEARCH METHODOLOGY

The research methodology for the Thesis followed the logical procedure that is suggested by Yin (2009, 24): plan, design, prepare, collect, analyze and share. The carefully analyzed and chosen research methods and techniques are described in the sections below, including the rationale behind a qualitative research approach. Additionally, the exploited data collection and analysis methods are characterized.

4.1 Qualitative Research

The Thesis is based on a qualitative research approach. It concentrates on suggesting practical improvements and finding development areas (Ghauri 2004, 109; Yin 2003, 13-15), and even producing new insights and knowledge (Ghauri & Grønhaug 2002, 29). The purpose, to understand research topics, is typical for qualitative studies (Ghauri & Grønhaug 2002, 27). The chosen research strategy was to gain and adjust theoretical knowledge for practical problems (Ghauri & Grønhaug 2002, 30, 40-41; Yin 2009, 18). Articles and books that had become familiar during this MBA, Master of Business Administration, Degree Programme, a number of strategic management books and relevant studies found were applied in literature reviews. They formed the theoretical knowledge construction, which was used for structuring research topics and concretizing this Thesis. It was important to find specific information and previous facts to serve as evidences while answering the research questions (Turabian 2007, 6-7). The research questions are mainly applied in nature, but also conceptual (Turabian 2007, 8-10), in order to better support the chosen research strategy.

Interviews of former management team members provided the study with different perspectives and a comprehensive, quality substance. These insights are intertwined with observations and experiences of my own. A qualitative research is needed for a company that is controlled and evaluated by corporation level management teams.

With the help of interviews, observations and personal experiences the first research question, *What strategic actions has the R&D function accomplished since the 1990s to achieve major product responsibilities?*, was studied. The third research question, *How to manage strategic planning at the Case Company in an effective way? How the existing capabilities could be managed to create new knowledge, added value and*

sustainable competitive advantages?, occupied additionally literature reviews to a great extent. Question number two, *What are the effects of the ongoing evolution towards all-IP and packet switched data on the Case Company?*, leant mostly on mobile telephony equipment manufacturer documentation and information on the Internet. Interviews, observations and my own experiences were needed, too.

4.2 Case Study Research

A case study is the main research method in this Thesis. The case study method was useful in leveraging understanding of, for example, organizational social phenomena, such as managerial processes. The research areas were presented in realistic and actual ways by introducing the relevant facts (Roper & Millar 1999, 4) and opinions, but also by learning from differences (Ellet 2007, 6). Although case studies are usually relevant only for a few years (Roper & Millar 1999, 6), the nature of this Thesis is not too time critical. Organizational capabilities and especially work culture positions will not change overnight. The long and successful history with a number of major technological shifts in the dynamic industry can be seen as positive signs that support this logic. Historical positions may even provide one with sustainable competitive advantages (Barney 1991, 107-108, 115).

The research area relates to the ability of the Case Company to sustain its competitive position. This case study is exploratory, with mainly “what” research questions and with a goal to create evidence-based assumptions for further studies (Ghauri 2004, 110; Yin 2009, 7-9; Ellet 2007, 27-28, 30-33). The type of case situation is an evaluation, the outcome being hypotheses and explanations about the performance effectiveness of an organization (Ellet 2007, 23, 75-83; Yin 2009, 19-20) as signs of its competitive position. This type of information was essential for the Thesis, since companies specialize in producing different types of products and services, based on organizational capabilities to manage strengths of their own (Krugman & Obstfeld 2000, 11-13). The case situation type could have been either a problem or a decision, but no critical business decisions were available for further analysis (Ellet 2007, 20-23). The evaluation criterion in this case was added value, through a better performance or an ability to create new business, to the parent company.

4.3 Data Collection and Analysis Methods

This case study consists of theoretical and the Case Company specific empirical parts. Data for the theoretical framework were obtained by literature reviews. The Case Company specific information was gained through reports, observations, interviews and experiences of my own. Several information channels are characteristics of a case study (Ghauri 2004, 109; Yin 2009, 11, 18). Management level strategic insights, as well as organizational strengths and weaknesses, were gained by interviewing former and current directors and managers of the Case Company. Both semi-structured and unstructured interviews were used, with a general intention to create an open discussion (Yin 2003, 89). The interviews were recorded into a mobile phone and then stored into my own computer. Interview questions, in English, were sent to the interviewees well before the sessions, in order to get the questions validated and to increase the preparedness of the interviewees. The interview sessions were conducted and recorded in Finnish, to avoid misinterpretations caused by a foreign language. Interview transcripts were documented after the acceptance of the contents by the interviewees.

Theoretical framework and empirical data were collected and analyzed by means of a triangulation method, in which new facts are built up from literature reviews, interviews and observations (Ghauri 2004, 115-116; Yin 2009, 18), also personal experiences were useful. Competitive intelligence was applied for evaluating the strategic positions of four major equipment manufacturers from the point of view of the mobile telephony evolution. Porter's (2004, 3-5, 159-161) competitive force 'industry competitors' and product life cycle tool were utilized for defining the industrial and competitive business environment, and validating the life cycle phase of current products, respectively.

The motive of this case study was aligned with the main objective of the Thesis in Section 1.2. An authentic understanding and interpretation of data is a challenge in the analysis phase (Ghauri 2004, 117). Discussions in the interviews were open, due to the topics being familiar to both parties, impacting directly on the relaxed atmosphere. The interviewees gave invaluable input, especially from the point of view of the company management, as is briefly described in Section 4.1. I selected the interviewees carefully, paying special attention to reliability aspects of the people and expected outcome. Specific information regarding the development stages of organizational capabilities since the beginning of the 1990s was not available.

Validity aspects were able to be considered empirically inside the Case Evidence chapter. The theoretical framework of the Thesis was chosen carefully by using articles, studies and books mostly from widely-accepted researchers. The phases of the defined analytical framework were constructed with the help of the theoretical framework. From the point of view of the applicability of the research process, I believe that the degree of reliability of this Thesis is high. Of course, contents of the analysis phases would be case specific.

5 CASE EVIDENCE

This chapter concentrates on capitalizing the theoretical framework in the Literature Review, the determined analysis process in the Analytical Framework and the analysis methods and techniques in the Research Methodology. Interview results, observations and experiences of my own are essential in this qualitative research study. All the three research questions are answered within the sections hereunder. Strategic suggestions and opportunities for improvement for the Case Company are created. The ways how the capabilities of the organization are exploited are also under analysis. Strategic alternatives are founded on existing strengths and opportunities. The main objective of the Thesis is to assess the Case Company and to provide the head of the organization with strategic suggestions and a development plan. The emphasis is on staying competitive and becoming a preferred partner within the corporation. I do not create a new strategy to the Case Company, but rather point out important elements that could be considered more thoroughly. Additionally, I propose opportunities for improvement concerning the weaknesses found. These proposals are based on investigations into the efficiency of exploiting organizational capabilities and external opportunities.

5.1 External Strategic Evaluation

5.1.1 Competitive Environment, Technology View

The case evidence arrangement, as well as the Case Company analysis, starts from the hypothesis that mobile telephony evolution will continue towards IP-based services. That is to say, all the equipment manufacturers have similar technological targets. Furthermore, since all the major vendors are global companies, social and political environments of the competitors are assumed to be alike. The only exception is the suspicious treatment of Huawei by the American authorities.

During the first quarter of 2011 the migration towards mobile IMS multimedia services showed strong signs of acceleration. Over 50 % of all IMS-equipment, wireless and wireline, sales agreements were made in the mobile telephony segment. (Infonetics Research 2011.) Mobile broadband has evidently gained attention. Reasons behind this can be found, for example, from increased data rates and convenience aspects when the place to receive messages and pieces of news is not in a dominant position.

A mobile core network has interfaces to 2G, 2nd Generation Mobile System, and 3G, 3rd Generation Mobile System, radio networks, but also to various fixed telephony networks, PSTN/ISDN/PLMN, Public Switched Telephone Network/Integrated Services Digital Network/Public Land Mobile Network. Current layered architecture based mobile core networks can be seen as an evolutionary step towards all-IP networks, in which circuit and packet switched domains are not physically separated from each other. Three types of core network transport backbones are possible: Time Division Multiplexing, TDM, which is used in GSM-networks, Asynchronous Transfer Mode, ATM, and IP.

Both down- and uplink data speeds are increasing in radio networks. Smart phones become more and more popular. These factors are intertwined with one another. The ongoing trend sets also the demands regarding the capabilities of core networks. The challenge is how to migrate quickly from circuit switched voice services into packet switched IMS multimedia services (3GPP 2006, 8). At that stage, pure voice calls will be carried over the IP-technology, and operators will be able to get rid of TDM-backbones. If IP-standards supported an important mobile network feature, QoS, Quality of Service, even the ATM-transfer technology would be obsolete.

5.1.2 Competitive Strategy Formulation

Competitive strategies can be formulated with the help of four major factors (Porter 2004, xxv-xxviii), as shown in Figure 5. Organizational and industrial elements reveal internal strengths and weaknesses, as well as external opportunities and threats, respectively. Government policies and social concerns, for example, climate change issues, belong to the broader societal and political expectations element. The fourth area includes values of key implementors. I draw the arrows between the four factors and competitive strategy (Porter 2004, xxvii-xxviii) as double-headed, due to the fact that the nature of communication is dialogic. The added directions are highlighted in red colour. That is, for example, strengths, weaknesses, opportunities and threats affect also competitive strategies, not only vice versa. Mintzberg et al. (2005, 25-34) introduce a similar basic model for building a strategy.



Figure 5. Competitive Strategy Formulation Context (Porter 2004)

Currently, sustainable and environmental strategic thinking is essential, due to ubiquitous challenges caused by climate change. It occupies industrial, societal and political factors externally, but is relevant to values of each individual. Purely from the point of view of business, the target is to generate profit to shareholders, owners. Of course, from marketing and branding perspectives the green values are essential in order to attract an increasing number of ethically aware customers.

Mobile telephony industry specific analyses concentrate on the Case Company, but also the parent company is compared to the main competitors to a certain extent. The product strategy at the Case Company contributes to the business strategy of the corporation. And the strategy of the Case Company is dependent on the strategic position of the parent company. Product and service responsibility aspects require information about competitors' products and product strategies. Furthermore, the responsibility means also adaptive adjustments to sustain the competitiveness of the product. The aim of the mobile telephony industry analyses is to provide information about the underlying notions that compose essential elements for strategic planning.

Recently, price competition has overridden product differentiation. Still ten years ago manufacturers put huge efforts to develop own proprietary features to attract customers. The lack of feature differentiation does not mean that the Case Company would have

less work to be done. Actually, the competition occurs at the time-to-market level. The fastest implementor and feature deliverer gets most of the market attention. Usually one organizes product demonstrations in case of significant feature pilots. Such milestones mean higher reputation. The ultimate goal is to satisfy customers, create reliable relationships and increase customer loyalty. Additionally, the quicker one is able to implement new software and deliver new products, the less one has to pay for the development and verification work.

Industry analyses include, for example, technological leadership and industry evolution aspects. An evolution analysis is important in strategic planning, as well as a joint competitor analysis, due to the mobile telephony competition being global. Table 1 is a summary of competitive intelligence results concerning the evolutionary stage of relevant and specific products. Moreover, the claimed, subjective market share figures, in terms of a number of subscribers that can be served with the help of delivered products are shown. The main features and differences are highlighted, and the statuses concerning the readiness for packet switched IMS multimedia services, and all-IP, are gathered. Information of main features is acquired from confidential product catalogues. Media streaming and VoIP, Voice over IP, functionalities are advantages from the point of view of the evolution towards the IMS. 3GPP, 3rd Generation Partnership Project, is the digital mobile telephony standardization forum, including, for example GSM and WCDMA, Wideband Code Division Multiple Access, technologies and features.

Table 1. Major Manufacturers and Key Characteristics of Current Products

Producer	Market Share	Main Features	IMS-readiness
Firm A	- “market leader” (over 3 Billion subscribers)	- easy scalability - speech quality over 3GPP standards - automatic and dynamic capacity allocation between GSM and WCDMA - media stream readiness - VoIP supported	- smooth software evolution to all-IP and IMS
Firm B	- “market leader” (over	- scalable architecture - dynamic capacity allocation	- smooth software

	1 Billion subscribers)	between GSM and WCDMA - media resource handling - VoIP supported	evolution to VoIP and IMS
Firm C	- 2,35 Billion subscribers	- scalable architecture - enhanced voice quality - media stream readiness - compressed real-time VoIP	- smooth evolution to IMS
Firm D	- “market leader in IMS”	- scalable architecture - enhanced voice quality - high network resiliency - VoIP supported	- evolution to IMS supported

Feature wise, the current products from the four major manufacturers are functionally rather similar to each other. That is, currently none of the manufacturers seem to have competitive advantages based on technology leadership.

From the point of view of the product life cycle, signs of a mature phase are, for example, more standardized features and capacity increments instead of product differentiations. Additionally, efforts to extend the life cycle, lower margins and price competition are visible. Fewer competitors, due to consolidations and customers' intensive cost control are characteristics of a declining product life cycle phase. Surprisingly, one sign of an early phase of a cycle appears: the Case Company has just changed its team-based working culture. Actually, this relates to the cost minimization and competence development, as well as to an effort to improve one's competitive position. (Porter 2004, 157-162.) Mature industries provide one with a number of challenges that are analyzed within Section 5.1.3.

The threat of substitutes gets higher, for example, during technology evolutions (Porter 2004, 23-24). The ongoing evolution towards all-IP in mobile telephony is discussed in Section 5.1.1 and in previous paragraphs. Manufacturers concentrate on product and performance improvements. Mobile networks can offer higher and higher data rates. For example, mobile television broadcasting is possible already with the current technology. It is improbable that the evolution regarding data networks turned back to fixed telephony solutions. This does not mean that it is going to be all mobile and wireless, including transport networks.

For the Case Company a prolonged product life cycle would give two opportunities. Firstly, the organization could innovate and develop current products further. Secondly, more time would be available to come up with the proof of concept whether the new team culture really gives an added value to the parent company. In the 1990s, two of the main product characteristics were quality and robustness, in terms of operability.

5.1.3 Three Generic Strategies

Porter (2004, 35-40) introduces three generic strategies, overall cost leadership, differentiation and focus, out of which a company is to select the main strategy. Overall cost leadership is not valid for the Case Company or its parent company, since R&D costs are not tried to be minimized and sustainability aspects are important (Porter 2004, 148). Of course, one has to react on price competition in the business environment, where the lack of differentiation is dominant. Overall cost-awareness is important, especially in mature industries (Porter 2004, 249). The second generic strategy, differentiation, suits better to the current business environment than overall cost leadership, as discussed previously in Section 5.1.2. Currently, feature requirements are more standardized, due to global operators' active participation. One has to be able to differentiate, for example, at services level. This requires both a possibility and an organizational ability to carry out vertical integration actions. The Case Company tries to differentiate by deploying a new team-based working culture. The implemented new process cannot offer any long-term solution or a sustainable competitive advantage, but it may be considered as a skill to learn and change. The latter assumption is crucial when thinking about loyalty and reputation positioning and the parent company's focus-oriented strategy. In other words, if the Case Company is able to proceed in continuous improvements and differentiate in a positive manner, the more probably the parent company will continue co-operation with it. In a similar way than the parent company focuses on certain customers and product areas, it focuses on certain internal suppliers as a buyer.

Porter's (2004, 120) suggestion to create new buyers could be analyzed further, from the point of view of differentiation actions in the Case Company. The Case Company should intensify its competitor analyzing activities. Competitor analyses are crucial for understanding own capabilities (Porter 2004, 17-23). Without business analyses one

will miss quality strategic and operative decisions. Management must be capable to translate business and competitor information into knowledge in order for the Case Company to remain competitive. (Hannula & Pirttimäki 2003, 593-596.) Co-operation with customers and competitors is essential both for time-to-market and quality reasons (Barney 1999, 144). In addition to them, collaboration is able to increase brand loyalty at the parent company level and reputation at the Case Company level. One more gain from networking is an opportunity to access new markets and to create new buyers.

A number of the organizational characteristics of maturity are visible in the Case Company. For example, tighter budgets, due to decreased ROI and profit levels, are concretized. Product development process improvements are made, too. The situation of strategic planning, management roles and services, as well as ways to motivate and reward employees are still unchanged. (Porter 2004, 237-253.) Based on these facts and the analyses in previous paragraphs, the Case Company seems to be stuck in the middle of three generic strategies. Actually, the question is whether the Case Company has a strategy.

5.1.4 Summary of External Strategic Evaluation

The external strategic evaluation results of the analytical framework are summarized in this section. Also the second research question is answered. Table 2 contains the opportunities and threats found during the external strategic evaluations, with the help of relevant theoretical knowledge from the Literature Review. Section numbers in parentheses indicate the position where a specific opportunity and threat is discussed.

Table 2. Opportunities and Threats for Case Company

Opportunities	Threats
+ services (5.1.2, 5.1.3)	– smaller budgets (5.1.2, 5.1.3)
+ continuous improvements (5.1.3)	– strategic planning (2.1, 5.1.3)
+ mobile broadband (5.1.1)	– line management roles (5.1.3)
+ climate change (5.1.2)	– human aspects (5.1.3)
+ quick deliveries (2.2, 5.1.2)	– motivation and rewarding (5.1.3)
+ teams (2.4, 5.1.2, 5.1.3)	– attention to services (5.1.3)
+ all-IP (5.1.2)	

+ potential new buyers (2.1.2, 5.1.2, 5.1.3) + customer networking (2.2, 2.3, 5.1.2, 5.1.3) + competitive intelligence (2.1.2, 5.1.3)	– no defined strategy (2.1, 5.1.3) – mature product (5.1.3)
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Prerequisites for service business activities are, for example, vertical integration and the existence of required competences. Climate change has direct impacts on sustainable and environmental areas. Quick deliveries, that is, the speed affects positively the development costs. Team culture offers an opportunity for better quality, which means less maintenance costs. It provides one also with a short-time competitive advantage, compared to the competitors that start similar team-based cultural deployments later. All-IP and technology evolution leads to a pro-longed life cycle for the current products. Collaboration and networking activities with customers decrease time-to-market and increase product quality, since requirements are received directly, without interferences. Brand loyalty and case company's reputation get higher. Additionally, individual motivation is fertilized by concrete and meaningful work assignments with customers. Networks include also a potential to create new buyer-supplier agreements. Continuous improvements regarding the development process and organizational capabilities have direct effects on the reputation. Competitor analyses are essential in strategic planning, for example, to understand capabilities inside a company.

The threat 'smaller budgets' in Table 2 relates to the price competition and cost awareness. Strategic planning, apart from operational excellence actions, is a threat because the lack of a concrete strategy is an indication of managerial weaknesses. More attention to services, line management roles, personnel motivation and incentive programs are required when a product or an industry is in a mature phase. Corrective strategic changes should be planned when the sales figures peak and start decreasing.

The second research question, *What are the effects of the ongoing evolution towards all-IP and packet switched data on the Case Company?*, occupies both the business environment and competitive intelligence. The ongoing technological evolution towards all-IP offers a pro-longed life cycle for the current products. However, this will not happen automatically. Each competitor and all the involved organizations need to be active for ensuring that the evolution goes via the integration of IMS, that is, according

to the current strategic positions and plans. Customer commitments are important in standardization for supporting the ongoing technological evolution. A prolonged product life cycle of products offers two opportunities. First, the organization would have interesting work assignments in the near future. Second, the team-based bottom-up working culture would get more time to mature and demonstrate its applicability to improve speed and quality. Co-operation with customers could be started well before any pilot version is ready to be introduced, in order to optimize time consumption for the product development. The Case Company could, for example, create a collaboration network with local customers. Network actors' locations geographically close to each other is an advantage (Wahlroos 2010, 236).

5.2 Internal Strategic Evaluation

The internal strategic evaluation considers the historical background of the Case Company, strategic and operative management in order to get input for finalizing the SWOT-table. Interviews and experiences of my own are used to perceive internal strengths and weaknesses. In this Thesis, strengths comprise capabilities and resources of the Case Company.

The majority of Case Company specific information is confidential and not visible in this version of the Thesis.

5.2.1 Case and Parent Company, Organization and Strategy View

The discussions within this section are confidential.

5.2.2 Strategic Management in Case Company

The discussions within this section are confidential.

5.2.3 Operative Management in Case Company

The discussions within this section are confidential.

5.2.4 Summary of Internal Strategic Evaluation

The internal strategic evaluation results of the analytical framework are summarized hereunder. Also the first research question is answered. Table 3 contains the strengths and weaknesses found in this section, with the help of qualitative data obtained from interviews and relevant theoretical knowledge from the Literature Review sections. My own experiences are utilized, too. The reference Section numbers are given within the parentheses. The strategically most important strengths and weaknesses are not shown on Table 3, due to confidentiality reasons.

Table 3. Strengths and Weaknesses of Case Company

Strengths	Weaknesses
+ development quality (2.2, 5.2.1)	– no defined strategy (2.1, 5.2.1)
+ experienced employees (5.2.1, 5.2.3)	– high cost level (5.2.1)
+ public relations (2.2, 5.2.1)	– small home market (5.2.1)
+ perseverance (5.2.1, 5.2.2)	– slowness (5.2.1)
+ reputation (2.1.3, 5.2.1, 5.2.2)	– no BI function (2.1.2, 5.2.2)
+ collaboration capability (2.2, 5.2.1, 5.2.2)	– top-down organization structure (5.2.3)
+ ability of complex products (2.2, 5.2.1)	– lack of business information (5.2.3)
+ facilities and equipment (5.2.3)	– lack of entrepreneurship (5.2.3)
+ continuous learning in teams (2.4, 5.2.3)	– minor HR-department (5.2.3)

The ability to develop quality products by experienced employees is crucial and the experience covers all fields of the mobile telephony. Politics and public relations are utilized especially when responsibilities of new products are negotiated. Perseverance, reputation, collaboration capabilities and technical competences are invaluable assets in those negotiations. Teams have shown how new skills can be learned from team members, and how new knowledge can be created within teams. However, it does not override the need for further education in strategically important areas.

The list of weaknesses is summarized in this paragraph. The weakness ‘no defined strategy’ sounds critical. High cost level is an issue that one cannot do much about. If

the home market was bigger, the country's overall significance to the parent company would be higher. Competitive intelligence is used widely and systematically within the information technology and telecom sectors in Finland (Wright 2005, 1-2), but not by the Case Company. The organization structure does not support the new team-based way-of-working that is deployed in order to gain speed. Operative teams do not get the required business information. Overall, entrepreneurship skills are not visible in the organization. The human resource department does not have enough resources to support individuals in self-managing teams.

The first research question, *What strategic actions has the R&D function accomplished since the 1990s to achieve major product responsibilities?*, can be answered by applying the discussions above and in Sections 5.2.1 and 5.2.2. Reputation and capabilities to develop complex technology products are the biggest competitive advantages of the Case Company. Strategies have not been used to give directions to the employees. The reason could be that the management tries to get any work, especially now that the products are in a mature phase. Networking and collaboration capabilities have been practiced, but not in product development activities. The management had wide internal contact networks in the 1990s when employees were sent abroad to help with technological challenges. The competences and capabilities of employees have improved since the 1990s. Self-managing teams are able to develop and deliver quality in an effective way. This means possibilities to lower production costs.

5.3 Exploration of Strategic Alternatives for Case Company

Strategic alternatives are formulated for the Case Company in this section. First, the SWOT-table and the confrontation matrix are introduced. Opportunities and threats are derived from the External Strategic Evaluation section, supplemented by the interviewees. Strengths and weaknesses are received from the Internal Strategic Evaluation section. The generated SWOT-table is utilized to create a confrontation matrix, which indicates possible strategic alternatives. Strategic suggestions are summarized by answering the third research question.

5.3.1 SWOT and Confrontation Matrix

Table 4 is a SWOT-analysis result regarding the substantial strengths and weaknesses of the Case Company, as well as external opportunities and threats. Strengths and weaknesses are gathered from Table 3 within Section Internal Strategic Evaluation. Opportunities and threats are provided by the External Strategic Evaluation section, in which they are collected into Table 2. The SWOT-analysis gives answers to the question where the Case Company is right now. The reference section numbers are given within the parentheses.

Table 4. SWOT of Case Company

<p>Strengths</p> <ul style="list-style-type: none"> + development quality (2.2, 5.2.1) + experienced employees (5.2.1, 5.2.3) + public relations (2.2, 5.2.1) + perseverance (5.2.1, 5.2.2) + reputation (2.1.3, 5.2.1, 5.2.2) + collaboration capability (2.2, 5.2.1, 5.2.2) + ability of complex products (2.2, 5.2.1) + facilities and equipment (5.2.3) + continuous learning in teams (2.4, 5.2.3) 	<p>Weaknesses</p> <ul style="list-style-type: none"> – no defined strategy (2.1, 5.2.1) – high cost level (5.2.1) – small home market (5.2.1) – slowness (5.2.1) – no BI function (2.1.2, 5.2.2) – top-down organization structure (2.1, 2.4, 5.2.3) – lack of business information (5.2.3) – lack of entrepreneurship (5.2.3) – minor HR-department (5.2.3)
<p>Opportunities</p> <ul style="list-style-type: none"> + services (5.1.2, 5.1.3) + continuous improvements (5.1.3) + mobile broadband (5.1.1) + climate change (5.1.2) + quick deliveries (2.2, 5.1.2) + teams (2.4, 5.1.2, 5.1.3, 5.2.1, 5.2.3) + all-IP (5.1.2) + potential new buyers (2.1.2, 5.1.2, 5.1.3) + customer networking (2.2, 2.3, 5.1.2, 	<p>Threats</p> <ul style="list-style-type: none"> – smaller budgets (5.1.2, 5.1.3, 5.2.1) – weak strategic planning (2.1, 5.1.3) – line management roles (5.1.3) – human aspects (5.1.3) – motivation and rewarding (5.1.3) – attention to services (5.1.3) – no defined strategy (2.1, 5.1.3) – mature product (5.1.3) – low-cost countries (5.2.1)

5.1.3, 5.2.3) + competitive intelligence (2.1.2, 5.1.3) + social media (5.2.1) + large product responsibilities (5.2.1) + innovation (2.2, 5.2.2)	
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Table 5 illustrates the paired confrontations of strengths-opportunities, strengths-threats, weaknesses-opportunities, as well as weaknesses-threats. These confrontations form four types of strategy fields: offensive, reactive, adjusted and defensive, respectively. The most feasible strength-opportunity and strength-threat based strategies are indicated as examples inside Table 5. Both offensive and reactive strategies can be built on internal strengths. Threats in the reactive strategy type can be turned into opportunities, with the help of corrective actions within the organization. Weakness-opportunity and weakness-threat based strategies are not handled further in this Thesis, since they mean an incapability. To compete without capabilities in business environments full of threats, should be avoided. Strategic suggestions are discussed in Section 5.3.2. To turn weakness components of weakness-opportunity paired strategies into strengths is time-consuming. Opportunities for improvement concerning the weaknesses found are included in Section 5.4.

Table 5. Confrontation Matrix of Strategic Alternatives

<p>ANALYSIS</p>	<p>Opportunities</p> <p>O1: services O2: continuous improvements O3: mobile broadband O4: climate change O5: quick deliveries O6: teams O7: all-IP O8: potential new buyers O9: customer networking O10: competitive intelligence O11: social media O12: large product responsibilities O13: innovation</p>	<p>Threats</p> <p>T1: smaller budgets T2: weak strategic planning T3: line management roles T4: human aspects T5: motivation and rewarding T6: attention to services T7: no defined strategy T8: mature product T9: low-cost countries</p>
<p>Strengths</p> <p>S1: development quality S2: experienced employees S3: public relations S4: perseverance S5: reputation S6: collaboration capability S7: ability of complex products S8: facilities and equipment S9: continuous learning in teams</p>	<p><u>Offensive strategy</u></p> <p>S3, S4, S5, S6, S9, O1, O3, O7, O8, O9, O10, O11, O12, O13: - exploit capabilities, CI and intangible assets to create new products and services, also to new buyers - concentrate on all-IP area, expand to social media - use customer networking to speed up development and innovate - protect new innovations</p>	<p><u>Reactive strategy</u></p> <p>S1, S2, S7, S8, T1, T2, T3, T4, T5: - lower production costs according to budgets, incl. organizational restructuring - act when competitors have done something new - try to motivate employees when problems occur - just wait and see</p>
<p>Weaknesses</p> <p>W1: no growth efforts W2: high cost level W3: small home market W4: slowness W5: no BI function W6: top-down organization structure W7: lack of business information W8: lack of entrepreneurship W9: minor HR-department</p>	<p><u>Adjusted strategy</u></p> <p>Not applicable in the Thesis</p>	<p><u>Defensive strategy</u></p> <p>Not applicable in the Thesis</p>

Offensive strategies are built on strengths and capabilities of the Case Company by exploiting external opportunities whenever found reasonable. Differentiation is needed when one cannot compete with low-cost countries. By intertwining the strengths ‘abilities to handle public relations and collaborate’, ‘perseverance’, ‘reputation’ and ‘continuous learning in teams’ with the opportunities ‘services’, ‘mobile broadband’, ‘all-IP’, ‘potential new buyers’, ‘customer networking’, ‘competitive intelligence’, ‘social media’, ‘large product responsibilities’ and ‘innovation’, one has the elements of most feasible strategies available. Offensive strategic suggestions are discussed more thoroughly in Section 5.3.2.

Also reactive strategies are built partially on internal strengths, existing capabilities and resources. Strategic changes are made when problems already exist or even when threats are concretized. The strengths ‘development quality’, ‘experienced employees’ and ‘an ability to develop complex products’ are inherited from the recently relevant working culture. The team-based culture will enhance those inherited capabilities and evoke new knowledge and skills to support quick deliveries. Facilities and equipment are well-functioning, and the information technology infrastructure is reliable. Four reactive strategies can be formulated as examples by confronting inherited strengths and a given set of threats. First, one can lower production costs according to decreasing budgets, including an organizational restructuring as one of the means. Second, one acts first when competitors have enhanced their working cultures or when something else is worth utilizing. Then, one can concentrate on motivating and talking with employees when problems occur. The final reaction is just to wait and see what the others decide upon one’s behalf. In this Thesis I do not process reactive strategies any further. The main rationale behind this is that threats should be converted first into opportunities in order for the case company to survive. For example, the threat ‘smaller budgets’ is handled as an opportunity ‘differentiation’ in the third paragraph of Section 5.3.2. My intention is to raise strategic suggestions and ways to construct strategies, not to define any strategy for the Case Company.

5.3.2 Strategic Suggestions

Strategy related suggestions are founded on the relevant findings in this Thesis. The third research question, *How to manage strategic planning at the Case Company in an effective way? How the existing capabilities could be managed to create new*

knowledge, added value and sustainable competitive advantages?, is answered by giving strategic suggestions hereunder.

Kaplan and Norton (2008, 1) and Grant (1996, 375-376) suggest that strategies determine long-term directions of companies. The Case Company should separate operational excellence and cost adaptation activities from the strategic planning process (Porter 2004, x, xv-xvi; Kaplan & Norton 2008, 1). An R&D strategy contains concrete product development related targets, capability improvements and organizational changes (Manoski 2002). Larsson (2004, 17-18) emphasizes the importance of an R&D strategy as an input to the corporation level business strategy. Currently, strategic targets of the Case Company are neither visible, nor communicated to the employees. A strategy would provide one with a sense of entrepreneurship. No serious efforts to create new business by oneself are visible. Generally, changes, also at a strategic level, are easier to implement in a bottom-up manner when employees are enthusiastic (Mintzberg et al. 2005, 335-338). This is noticed also in the Case Company during the deployment of self-organizing teams. The top-down management approach and opinion leadership have caused limited entrepreneurship skills.

The Case Company could concentrate on building and utilizing offensive strategies. They are based on external opportunities and internal strengths, organizational capabilities and resources. A differentiation factor could be a supplement to opportunities and strengths, in order to avoid competing for cost adaptations. This means that the threat 'smaller budgets' in Table 5 can be avoided by reversing it into an opportunity. One does not necessarily need to concentrate on all the strengths and opportunities at a time. To choose a specific direction is the most important starting point. One can, for example, exploit R&D level capabilities, intangible resources and competitive intelligence to create new products and services. To obtain new buyers could be the next logical strategic step. One could concentrate on all-IP technology and/or to expand to the area of social media, as a more and more important collaboration, communication and business channel.

Networking and co-operating directly with customers could provide the Case Company with a number of advantages. First, product development would contain correct requirements from the very beginning. Development and maintenance costs would decrease and ROI-levels increase. Fifth, team and individual level motivations would

improve. Too often functional contents of products do not meet exactly the expectations of customers. This problem could be avoided by interacting more with each other. The collaboration aspect is twofold, since customer co-operation would increase also motivation by giving a concrete meaning for product development. The sixth advantage would be a possibility to innovate something new with customers. Finally, business skills would be developed. Entrepreneurship skills have not been important in the Case Company. By focusing more both on co-operation and competition, companies are able to understand their networks. Strategic co-operation with certain prioritized customer groups could be started well before an official software pilot. Involved parties would gain from the shorter time-to-market and first-time-right business approach. The Case Company could, for example, create a local collaboration network. Trust will be attained via mutuality, and without trust a company can only compete.

Line management roles need to be adjusted according to the operative needs of the team culture. Interfaces should always add value and bureaucratic communication should be avoided (Grant 1996, 381, 385). In the Case Company this approach could consist of the management team, HR-management and self-managing operative teams. Operative teams would have a direct interface towards relevant business units. Since networking was a self-organizing process with a bottom-up approach (Ritter et al. 2003, 177; Nonaka 1994, 22-25, 30-32), the management style would be changed towards supportive. Human aspects, such as motivation and rewarding, reach more psychological dimensions when professional empowerment is available for the self-managing teams. Karami's, Jones' and Kakabadse's (2008, 7, 13-16) empirical studies show that the HR-management is in a strategic key position when developing organizational capabilities. Human resource professionals have a direct impact on improved effectiveness and competitive advantages of a company (Karami et al. 2008, 7, 9-16). Direct feedback occurs within the self-organizing and -managing teams. Weak strategic planning would not be probable if a strategy was used for defining the sustainable direction, including capability development, of the Case Company.

While planning a strategy in an expert organization, employees' contribution is essential. A corporation level strategy needs to be aligned with lower-level strategies (Kaplan & Norton 2008, 11-13, 125-144, 149-155; Larsson 2004, 7, 14-15, 35, 37-41; Bergfors 207, 79). To increase the added value of the Case Company, from the point of view of the parent company, means abilities to give input to a business strategy of a

corporation (Larsson 2004, 7, 17-18). The organization structure must support the strategy (Kaplan & Norton 2001, 11-12, 187-189; Mintzberg et al. 2005, 35; Bergfors 2007, 32) and organizational capabilities (Pearce & Robinson 2011, 18; Grant 1996, 378-379). I do not make any specific suggestions about a preferred organization model for the Case Company, since it is dependent on the chosen strategy. The management of the Case Company makes strategic and organizational decisions. I want to emphasize that self-organizing teams are the only operative employees that add value to the product within the Case Company. It has the ability to develop complex products by employees with production capabilities. When the new working culture is more mature, the quality assurance and other administrative functions will be able to be diminished. If the product quality improves considerably, also the resource allocations in the support organization will be changed from problem solving towards usability activities. Line managers' roles and the need for a stronger HR-department were discussed in the previous paragraph.

Strategic planning is able to reveal competence and knowledge gaps inside a company. Competitor analyses are essential in strategic planning, for example, to understand strengths and capabilities of one's own. To create trustworthy strategic plans in a company is a challenge: one has to know competences, including the tacit knowledge area, of each individual. Strategic planning should be dynamic and continuous, due to the nature of business environment. From the point of view of strategic management and sustainable competitive advantages, the most important management capability is to create relevant knowledge (Prahalad & Hamel 1990, 4-6; Nonaka 1994, 32-33). That knowledge provides the organization with a strategic ability to exploit it and create new knowledge continuously (Nonaka 1994, 32). The management capability to lead the innovation activities towards strategic targets is yet to be seen. The longer one has worked for the company, the wider and vertically deeper the contact networks are. My suggestion is that the number of older employees should be increased in the management team, in order to increase incremental innovation and relational capabilities. They would be able to lead by example – and experience. Concurrently, younger managers are able to learn from the older ones.

Prahalad and Hamel (1990, 6, 14) and Mintzberg et al. (2005, 231) suggest that strategies are dependent on learning and learning depends on capabilities. Learning and knowledge creation occurs by utilizing tacit and explicit knowledge areas (Prahalad

1993, 45; Nonaka 1994, 18-21, 34; Grant 1996, 377-380). Operative teams in the Case Company have shown how knowledge can be shared and new skills and knowledge learned from team members. Still, the need for further education in strategically important areas, such as entrepreneurship and networking, is visible. Efforts for organizational improvements require equal investments in technology, management and common learning (Prahalad 1993, 45). The need to train teams and individuals whenever seen reasonable in order to gain competitive advantages or to improve existing weaknesses should be satisfied.

Due to the competition in the mobile telephony industry, all the major manufacturers deliver similar functional contents, according to the standards. Deliveries occur also timely close to each other. Therefore, the only concrete distinctive factor would be services, in addition to the usability aspect. Cusumano (2008, 20-25) suggests that software business is shifting from products to services, due to decreased product and licence sales. This trend is valid also in the mobile telephony equipment business segment (Cusumano 2008, 25). However, product development speed and quality are the factors that companies are able to influence by themselves. For example, self-organizing, cross-functional teams are able to deliver faster and with better quality. When all the manufacturers have deployed new team-based development working cultures, other assets, competitive advantages have to be found.

From the point of view of the Case Company, the internal competition has same kind of characteristics as the external competition described above. One has to be able to diversify and differentiate in order to beat the competition. The deployment of team-based culture is a temporary competitive advantage. The existence of persistent hunger for reaching competitive advantages is crucial. Vertical integration towards the service business is feasible for the Case Company, especially when competences can be found in-house. Strategic co-operation with a service organization might be highly fruitful. Bergfors (2007, 78) suggests that R&D, sales and marketing people innovate most. Common activities between those parties would additionally teach specific professional languages of each other. Grant (1996, 380) emphasizes the role of common language in a knowledge integration process. For the parent company it is the added value of the Case Company that matters. The important role of the HR-department should be taken into consideration in possible functional integrations. Porter (2004, 301-305) suggests

that strategic benefits of vertical integrations are, for example, economies of combined operations and economies of internal coordination.

5.4 Opportunities for Improvement

This section concentrates on proposing improvements concerning the weaknesses found in this Thesis. All the weaknesses from Table 5 in Section 5.3.1 are included, but only the biggest and most relevant ones are processed more specifically. Possible enhancements on improvement areas are given. The proposed opportunities for improvement are meant to be beneficial for the whole corporation. Strategy related weaknesses ‘no defined strategy’, ‘high cost level’ and ‘small home market’ are discussed directly or indirectly in the previous, Strategic Suggestions, section. In addition to the weaknesses appeared during the Thesis, general challenges are processed in the last paragraph of the section.

I would say that the challenge ‘slowness’ is smaller now that self-managing teams have been deployed. Co-operation within the community of teams showed promising signs after the initial deployment phase. Teams are able to take operative responsibilities according to team commitments. A more integrated organization might accelerate the progress, as suggested in Section 5.3.2. Customer involvement could affect positively important factors, such as time-to-market and quality. This would lead into more satisfied customers, deeper partnership possibilities, mutually higher employee motivation and increased profits. Additionally, the Case Company would decrease its maintenance costs and increase its reputation even more. At the same time, the brand and image of the parent company could be raised.

By improving the weakness ‘no BI function’, timely decision-making towards pro-activity could be enhanced (Peltoniemi & Vuori 2005, 7). The natures of decisions needed at different organization levels are important to take into account. Operative subjects could be handled within self-organizing teams. Strategic decisions would reach management teams. Competitive intelligence activities are included in Section 5.3.2 while discussing offensive strategies and differentiation.

The weakness ‘top-down organization structure’, or actually the structure of organization, is dependent on the chosen strategy. The Case Company management

style evolution is ongoing. Still less than a decade ago, one lived mostly in a blue-printed company culture, where outcomes were predictable to a higher extent. This project-orientation is changing towards community focused approach, according to the team-based working culture. The communities, teams, actor groups are more cross-functional, self-organizing and -managing. Management control is seen as an impediment to speed and efficiency. The organization culture becomes bottom-up driven when operative decision making moves to teams. Mintzberg et al. (2005, 282) introduce five easy steps to destroy a culture. First, one manages via the bottom line. Second, one makes a plan for every action. No space is left for spontaneity or learning. Then, managers are moved around the organization so that they never get to know anything well, least the real business. Fourth, one treats people always as objects. Finally, one does everything in five easy steps.

‘Lack of business information’ and ‘lack of entrepreneurship’ relate one another. In addition to the relevant strategic suggestions in Section 5.3.2, a few more aspects are worth discussing further. Entrepreneurship abilities increase when new opportunities are actively searched for (Mintzberg 2005, 133). I could suggest that the importance of customers has a bigger role than assumed. Of course, the magnitude depends on the product and business segment. End-users from global perspective are conscious of market trends, thanks to fast information sharing via Internet communities. For example, the iPhone success of Apple can be seen as a response to subscribers’ requirements of graphical user interface and application creation possibilities. Interconnections between companies may occur at several levels, from standardization fora to strategic alliances and joint ventures. R&D employees could help in gaining more customer attention, for example, with the help of common collaboration activities. Additionally, the Case Company could take greater advantage of job rotations between different functional units. Organizational business capabilities can be increased by learning and doing together. I do not mean that all the tacit knowledge areas of every individual can or is even reasonable to be taught.

Employee knowledge development through empowerment and motivation are fundamental tasks of the top management for aligning individuals with a strategy (Kaplan & Norton 2008, 151-155). The deployed team-based working culture and self-managing teams require adjustments also in the organization structure. To build a motivating atmosphere, where the employee and the employer sides trust each others,

people are open-minded and self-confident, would be a big challenge from the point of view of the management. The related weakness 'minor HR-department' is discussed more in depth in Section 5.3.2.

This paragraph deals with general improvements concerning the Case Company. It will take time before the recommended actions have formed a new company culture. The assumptions from the past are very stiff. One way to accelerate the shift would be to involve employees more in the strategic planning. To serve this intention, observation and analysis skills at the network actor level would need further development. The ongoing cultural shift towards teams in the Case Company is meant to meet cost, effectivity and efficiency targets. The progress of these programs, together with the proposed actions in the Thesis, could be followed up regularly. If the gains stagnated at a modest level, the total situation should be analyzed carefully and necessary corrective actions taken.

6 CONCLUSIONS

The empirical findings in relation to the relevant theories and previous research results are assembled in this chapter. First, the background and motivation of the Thesis are disclosed briefly. Then, the summary section concentrates on describing the logical steps, analysis results and suggestions from the point of view of the objectives of the Thesis. Finally, possible future research study objects are indicated.

This Thesis suggests that product development strategies can be formed by utilizing generic business strategy components. Currently, R&D organizations have to be fast in delivering new products, in order to survive. Additionally, the needs to collaborate and innovate are prominent, for example, to differentiate from the product line mentality and to add value. Although the analytical framework proved to be appropriate within the research environment, in which the Case Company was assessed, more evidence is needed for further proofs of concept. The limitation of the Thesis relates to the lack of generalization. However, despite the lack of generalization, this Thesis enlightens the relationship between business and R&D strategies.

6.1 Motivation and Background

The main objective of the Thesis is to explore the Case Company and to provide the head of the organization with strategic suggestions and opportunities for improvement to stay competitive under the pressure of low-cost countries and become a preferred partner within the corporation. The analysis results include organizational strengths and weaknesses, industry specific and social opportunities and threats. The points of views are strategic management and capability exploitation. Additionally, the Thesis investigates how effectively the organizational capabilities, resources and external opportunities are exploited, and whether the development efficiency could be improved. The outcome of the Thesis contains both strategic suggestions and opportunities for improvement. The primary interest is to increase the added value of the Case Company, from the point of view of the parent company. The suggestions and proposals are meant to be beneficial also for the whole corporation.

6.2 Summary of Study

The nature of this Thesis is to assess the strategic position of the Case Company. The assessment is possible by utilizing a formal strategy formulation process. The relevant theoretical framework is applied in the analytical framework, in which both Kaplan's and Norton's (2008, 8, 35-42, 45-57, 59-66) and Porter's (2004, xxvii-xxviii) strategic process suggestions are considered. This Thesis concentrates on assessing the current strategy in the Case Company and reporting strategic suggestions and opportunities for improvement, not on creating a new strategy. It is important that the Case Company supports the strategy of corporation, with a special emphasis of its own.

Relevant literature reviews are performed within Chapter 2. They construct the theoretical background for the Thesis. Strategic management and strategies in general are described. Porter's (2004) three generic strategies, competitor analysis, intangible resources and vertical integrations are introduced. Then, the concepts of knowledge, organizational capabilities and sources of sustainable competitive advantages are discussed. A capability development model, with the emphasis on networking capabilities, the evolution of R&D management, self-organizing teams are also included in the Literature Review chapter. The information within the Literature Review of this Thesis is applied while designing the analytical framework. The qualitative research approach, the case study method with its techniques used for the Case Company and data handling methods are described after having set the analytical framework. The Case Company is introduced and case evidences are discussed and analyzed in Chapter 5. Both external and internal strategic evaluations are executed and summarized, according to the stages defined in the Analytical Framework chapter. Strategic alternatives are explored and suggestions constructed. Opportunities for improvement are structured. Also the research questions are answered in Chapter 5.

One of the main findings is that the Case Company does not have a communicated and visible strategy. The Case Company might have a reactive nature of the strategic position. That is, strategic management takes place first after operative actions. Despite the lack of strategic direction, the organization has high knowledge of desired actions at the product development level and good abilities to measure results. Organizational production, delivery and incremental innovation capabilities could form the base for the

Case Company strategy. According to Wahlroos (2010, 83) already the existence of a strategy fosters capability development.

Collaboration between operative teams and customers would increase efficiency and effectivity, entrepreneurship skills and motivation in the organization. The lack of active interfaces towards customers and other stakeholders may cause misinterpretations of requirements. Collaboration could be started well before any pilot version is ready to be introduced. The geographically closer the network actors were, the more effective the co-operation would be. Simultaneously, innovation culture could be fertilized, for example, by concentrating on solving concrete customer problems in the beginning. Innovativeness is considered as one source to entrepreneurship skills via co-operation. Any kind of customer networking and collaboration activity improves knowledge sharing, team working and learning skills for increasing the relational capability that is a prerequisite for a networking capability (Möller & Törrönen 2000, 11). Strategic capabilities of the upper level management determine the positions of the Case Company in its networks (Wahlroos 2010, 70-71).

Business and competitive intelligence would give benefits in strategic management and requirement setting processes. Operative teams have central roles, but business related skills, for example, in both business and competitive intelligence could be emphasized. Generally, one of the challenges is to obtain and maintain entrepreneurship skills needed for running and managing the Case Company as a business enterprise. The management should be able to make strategic business decisions with the help of external and internal signals. The role of the management team is essential, for example, when marketing and opening doors to Case Company external fora and networks (Wahlroos 2010, 70-71, 201-202). One important success factor so far has been trustworthy relations with the upper level management in the head quarters, as well as the reputation. The management team would need senior managers who could expand the relative relational capability level.

The self-managing teams, as the only operative actor groups, should be respected. In other words, the former administrative, control and line management functions do not add any value, being a subject to a re-evaluation. According to the analysis results, conventional line managers could be replaced by professional human resource managers. Their roles would be according to the operative needs of the team-based

working culture and bottom-up management. High quality empowerment skills would be able to support individual capability development in the dynamic business environment. This would mean broadened HR-responsibilities and active participation in strategic management, in order to contribute to the effectivity requirements of the organization. The HR-department would have a central role in strategic management while planning human resource profiles and education. Of course, more human resource employees would be required than currently. Departments with no clear added value to the business, for example, general operations and portfolio management, would be re-evaluated when the deployment of team-based culture is more mature.

The knowledge management function could comprise all the knowledge and experiences gained during one's career and life. This would increase the possibility to provide the Case Company and the corporation with a notable added value. Additionally, that would open new business opportunities and sources for differentiation. Vertical integration towards services would be one potential area to differentiate from the competition. The required capabilities are already in-house. Efforts to utilize tacit knowledge areas of individuals could be intensified, for example, by enlarging the human resource organization. Professional knowledge about human natures would strengthen the important self-confidence and empowerment components. The willingness to exploit individual knowledge for expanding organizational capabilities and to create a new work culture in an expert organization exists. Self-operating teams have the operative and technical skills needed, including the abilities to create new knowledge within teams. Top managers' most important task is to create relevant new knowledge for an organization (Prahalad & Hamel 1990, 4-6; Nonaka 1994, 32-33).

Applicability of the existing literature in the area of organizational capability and opportunity exploitation for the purposes of strategic management in R&D is verified in this Thesis. The defined analytical framework was applicable to this Thesis – to a high extent. I did not find any areas of the process that could be improved. The flow from the analytical framework via the chosen research methods and techniques until the case evidences was rational and logical. I do not foresee any obstacles why similar strategic assessments could not be conducted with the help of this Thesis. A generic strategy, overall cost leadership, differentiation or focus, Porter (2004, 34-41) depends on a company and its market situation. Analyses of business environments, product or

service evolutions and competitors provide a researcher with invaluable company external data. Both BI and CI activities help companies to adapt themselves to different business environments, since management teams should have capabilities to translate business information into knowledge and strategic actions (Hannula & Pirttimäki 2003, 593-596; Peltoniemi & Vuori 2005, 2). Opportunities and threats obtained from the external strategic evaluation are intertwined with internal strengths and weaknesses. A confrontation matrix is a convenient tool for evaluating strategic elements and deciding upon feasible alternatives for strategies.

6.3 Suggestions for Future Research

The results of this Thesis indicate a number of strategic suggestions and opportunities for improvement. The next stages would be to make a decision upon the strategy and to implement it. The Case Company level strategy would be the one to focus on first, before lower level alignments within the organization. After a certain period, an evaluation of the chosen strategy would be advantageous, in order to analyze whether the direction is correct. Strategic enhancements should be made whenever needed. The future, empirical research areas could comprise, for example, two assessment branches. First, a proof of concept like critical evaluation regarding the strategy formulation process suggested and utilized in this Thesis would be executed. Second, the contents, that is, the exploited organizational capabilities and strengths, would be determined in a precise way. The suggested future research study would provide the Case Company with an ability to create and enhance strategies. The underlying other advantages would consist of, for example, improved entrepreneurship skills, satisfied customers, increased ROI and higher reputation. These are, of course, dependent on the chosen strategy.

A capability related empirical study could provide the Case Company with substantial strategic information. This future research study would concentrate on measuring how organizational capabilities developed during a certain period of self-managing team deployment. The theoretical framework for the study could contain both advantages and disadvantages from the doctoral dissertation of Wahlroos (2010, 82-85). One of the focus areas in the study would be the development of relational capabilities, which are the prerequisite for networking capabilities and for entering the next level of value production (Möller & Törrönen 2000, 9-11). The empirical results of Wahlroos (2010, 128-132, 147-159) could be used for the sake of comparison.

Further research studies could also be run, for example, in the area of possible advantages of open source software and cloud computing. Empirical results from these study domains would be essential for the Case Company to contribute to the lowering annual budgets. Additionally, an empirical study concerning the ability of CI to translate competitor information into longer-term business knowledge and intelligence would be needed. This is valid in the Case Company, since strategic communication contributes only to short-term product development activities.

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