The Role of Strategic Intelligence Services in Corporate Decision Making

Organization and Management

Master's thesis

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THE ROLE OF STRATEGIC INTELLIGENCE SERVICES IN CORPORATE DECISION MAKING

Research Objectives

This research was conducted as a case study for XYZ Corporation and its purpose was to describe the role of strategic intelligence (SI) in corporate decision making. I aimed to find out how the case company's top management makes decisions in their work, to map out the current role of strategic intelligence activities in decision making, and to find suggestions on how SI could assist more in the decision making process.

Methodology

This research was conducted as a qualitative single case study. The case organization is a global, Finnish-based supplier of technology and services for various heavy industries. Thematic interviews were used as the main method for collecting data. The main empirical material of the study consists of 14 interviews with the case company's top management. The results of a previous internal SI survey were also used as secondary material to improve the analysis of the interviews. In addition, company internal material in the form of internal publications and documents and the company's intranet was used to provide background information. Analysis for the empirical data was performed by using analytic induction.

Research Findings

The research revealed that Strategic Intelligence (SI) helps to form a big picture of the business environment and to benchmark the company's operations. It is also a source of forward-leaning information. However, decision makers also need company internal information and tacit external information in addition to the public domain information that SI currently provides. The SI function could be improved through increasing the information flows within the SI network and conducting the analysis in cooperation with experts and decision makers. It was found that SI should interact more with decision makers.

Key Words

Strategic Intelligence, information analysis, decision making, strategy work

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STRATEGIC INTELLIGENCE –PALVELUIDEN ROOLI KONSERNITASON PÄÄTÖKSENTEOSSA

Tutkimuksen tavoitteet

Tämä tutkimus toteutettiin case-tutkimuksena XYZ Oyj:lle ja sen tavoitteena oli kuvata strategic intelligence (SI) –toiminnan roolia konsernitason päätöksenteossa. Pyrin selvittämään kuinka case-konsernin ylin johto tekee päätöksiä työssään, kartoittamaan strategic intelligence –toimintojen nykyistä roolia päätöksenteossa sekä löytämään ehdotuksia kuinka SI voisi olla enemmän avuksi päätöksentekoprosessissa.

Tutkimuksen toteutustapa, menetelmät ja aineistot

Tämä tutkimus toteutettiin laadullisena yhden tapauksen tapaustutkimuksena. Tutkimuksen kohdeyrityksenä oli kansainvälinen, Suomesta lähtöisin oleva konserni, jonka toimittaa teknologia- ja palveluratkaisuja eri raskasteollisuuden aloille. Pääasiallisena aineiston keruumenetelmänä käytettiin teemahaastatteluita. Empiirisen tutkimuksen pääaineisto muodostuu 14 haastattelusta kohdeyrityksen ylimmän johdon edustajien kanssa. Tutkimuksessa hyödynnettiin lisäksi valikoituja kohdeorganisaation luomia sisäisiä dokumentteja ja julkaisuja. Myös yrityksen aikaisemman SI-kyselyn tuloksia hyödynnettiin sekundaarisena materiaalina. Empiirinen aineisto analysoitiin analyyttisesti induktiivisella tutkimusotteella.

Tutkimuksen tulokset

Strategic Intelligence (SI) –toiminto auttaa muodostamaan laajemman käsityksen liiketoimintaympäristöstä ja vertaamaan yrityksen toimintaa muihin toimijoihin. SI on myös tärkeä tulevaisuutta koskevan tiedon lähde. Päätöksentekijät kaipaavat SI:n nykyisin keräämän julkisen tiedon lisäksi myös yrityksen sisäistä tietoa ja hiljaista tietoa yrityksen ulkoisesta toimintaympäristöstä. Toimintoa voisi kehittää lisäämällä tiedon kulkua SI-verkostossa ja tekemällä analyysiä yhdessä asiantuntijoiden ja päätöksentekijöiden kanssa. Tutkimuksessa kävi ilmi että SI:n tulisi olla enemmän vuorovaikutuksessa päätöksentekijöiden kanssa.

Avainsanat

Strategic Intelligence, tiedon analysointi, päätöksenteko, strategiatyö

INTRODUCTION

Making good decisions is key to surviving and being successful in the world of business. Good decision making requires that managers are aware of their surrounding environment and its effects on their company's operations. Vecchiato and Roveda (2010) consider that strategy formulation is strictly intertwined with the analysis of the likely evolution of the business environment. They assert that it is crucial to promptly detect opportunities and threats brought about by emerging trends in order to deal with them appropriately. What makes this challenging, however, is that business environments are characterized by continuous change. To a large extent, these changes happen in areas which an individual company has little control over, such as the macro economy, demographic trends, governmental regulation, competitor moves, and so forth. Even though a company rarely has power to control these variables, they impact on how business should be done in the future. Therefore it is important to monitor these variables and take them into account in decision making. Stinchcomb (2006) asserts that just as those who do not learn from the past are condemned to repeat it, those who do not anticipate the future are condemned to be controlled by it.

Johannesson and Palona (2010) consider that intelligence activities are a key input variable in all strategic decision making. They point out that as businesses seek sustainable growth in global business, it is essential for them to have accurate and timely intelligence about opportunities and threats in the international business environment. This is the reason why businesses have been found to use various types of strategic intelligence systems to gather and process this intelligence. Strategic intelligence (SI) is a practice that aims to assist decision making through providing information on the business environment. In a nutshell, it covers the gathering, compiling, analysis and dissemination of information that is relevant for strategic decision making. This information can be either external or internal and explicit or tacit. However, so far the emphasis of strategic intelligence literature has been on the process of gathering, analyzing and

disseminating data and there has been little research done on how SI activities affect decision making.

This study aims to describe the role of SI in decision making. It is performed as a single case study of XYZ Corporation. XYZ is a multinational, Finnish-based company that operates in multiple fields of industry. In order to prepare for future changes and incorporate them into decision making, XYZ has a Strategic intelligence (SI) function that gathers information on the external environment, analyzes it and communicates the resulting knowledge to decision makers inside the company. The objective of the SI function is to prepare XYZ for future changes and incorporate them into decision making. The company runs a process for tracking trends and signals in the external environment and communicating them to decision makers through various services, such as the XYZ Intelligence Plaza, BI reports and the publication "World around XYZ".

1.1. Research questions and objectives

In this study, I aim to describe how the case company's SI function assists top level decision making. There is plenty of literature regarding the fields of intelligence activities and decision making, but only a few studies have focused on how the two practices can be integrated. This study contributes to the research field of Strategic Intelligence through mapping out the role of SI in decision making. This is done through empirically investigating how decisions are made in the case company and then mapping out SI's role in the decision making process.

In addition to contributing to the research on the field of strategic intelligence and decision making, another purpose of the study was to produce managerial recommendations on what SI's role in decision making could be in the future and how the function could be improved to better support corporate decision making. This was done through utilizing relevant literature and the empirical data gathered through semi-structured interviews. This study aims to improve understanding on the topic and produce findings of practical relevance and value for XYZ. The following table introduces the main research questions and objectives:

Table 1: Research questions and objectives

General focus research question	Research objectives
How are decisions made at XYZ?	To describe the nature of decision making at XYZ.
	To observe the context of decision making through evaluating the balance between short term and long term decision making.
	To map out what kind of decision making processes there are in order to figure out how SI could support them better
What is SI's role in decision making?	To find out what kind of information top managers need to support their decision making
	To map out the way in which information produced by the SI function is currently utilized in decision making
How could SI assist more in decision making?	To observe decision makers' information needs and improvement ideas
	To draw conclusions based on the empirical findings and relevant theory to suggest how SI could be improved to better help decision making in the case company

1.2. Key concepts

Public Information: public information entails all of the information that can be legally and ethically located and accessed. It can be, for instance, a press release describing a competitor's marketing strategy. Public information includes news stories, major press releases and other sources of information that are commercially searchable and retrievable from the internet. (McGonagle and Vella, 1996)

Intelligence: intelligence is information that is analyzed, interpreted, and infused with developed implications (Fleisher and Bensoussan, 2007).

Analysis: analysis is the application of scientific and non-scientific methods and processes to interpret data or information. Analysis produces insightful intelligence findings and actionable recommendations for decision makers. (Fleisher & Bensoussan 2007)

Business Intelligence: Ghoshal and Kim (1986) and Gilad and Gilad (1986) define BI as a managerial tool that is used to manage and enrich business information and to produce up-to-date knowledge and intelligence for operative and strategic decision-making.

Competitive Intelligence: competitive intelligence is generally viewed as the process by which organizations gather actionable information about competitors and the competitive environment and, in an ideal situation, apply it to their planning processes and decision making to improve their enterprise's performance (Fleisher & Bensoussan, 2007).

Strategic intelligence: the gathering, analysis, and dissemination of data relevant to strategic decision making.

The different intelligence concepts are used somewhat confusingly in business intelligence, competitive intelligence and strategic intelligence literature. The relationship between the concepts employed in this study is presented in chapter 2.1.

Strategic decision making: strategic decisions typically address at least a medium-term time horizon, long-term at best. They occur infrequently or emerge from a formalized planning cycle and they require a sizeable input from key people and functions. Strategic decisions affect the organization's long-term direction; influence competitive dynamics and involve major changes to the firm's activities. They eventually become the over-arching blue-print for following decisions. Strategic decisions are typically made by senior executives, managing directors and/or the senior management team. (Fleisher & Bensoussan, 2007)

1.3.   Methodology

This research qualitative in nature and it is conducted as a single case study. Eriksson and Kovalainen (2008) assert that a qualitative research method should be employed when the

researched aims to create in-depth information and understanding. This holds true for this case study as well, seeing that the research aims to describe top managers' decision making processes and the nature of decision making in the company. The empirical data for the research was gathered through conducting 14 semi-structured interviews with XYZ's top managers. This material was backed up with secondary data in the form of company internal documents and the results of a previously conducted internal SI survey. The research population within XYZ consisted of the company's top management.

The methodology chapter of this thesis describes the research process and the methodological options employed in more detail.

1.4. Structure of the thesis

The following chapter will introduce relevant theory on intelligence activities and decision making. I will begin by introducing strategic intelligence in the wider context of intelligence activities. Then, I will review relevant literature on the fields of strategic intelligence and decision making and introduce alternative approaches to strategy. To conclude, I will review the role of SI in decision making.

The third chapter introduces provides a more detailed description of the methodological choices applied in this study. It will describe the research process, data and its analysis and review the study's validity and reliability.

In the fourth chapter, the empirical findings of the study will be revealed. In order to put the findings into context, the section will describe the current state of the company's business environment and review the characteristics and goals of the company's strategy and strategic intelligence activities.

The final chapter introduces the conclusions of the research. These conclusions are drawn based on the empirical findings and relevant literature on the subject. In the end of this chapter, some practical suggestions for improvement are provided for the case company.

STRATEGIC INTELLIGENCE AND DECISION MAKING

Zajac et. al. (1991) divide the field of strategy research into industry and competitor analysis and strategic decision making. In this literature review, I will follow this dichotomy through first observing the field of strategic intelligence (SI) through introducing different levels of intelligence activities. Then, I will observe relevant literature on decision making by introducing different approaches to strategy. To conclude, I will combine the two fields by evaluating SI's role in decision making and examining the implications of different approaches to strategy on SI and create a framework for the study.

2.1. Intelligence concepts

In this section, I will review the field of strategic intelligence: the gathering, analysis, and dissemination of data relevant to strategic decision making. I will begin by introducing the roof concept of Business Intelligence, move down to the field of Competitive Intelligence and end by examining the field of Strategic Intelligence. In the final chapter, I will describe intelligence activities in general.

2.1.1. Business Intelligence

Ghoshal and Kim (1986) and Gilad and Gilad (1985) define BI as a managerial tool that is used to manage and enrich business information and to produce up-to-date knowledge and intelligence for operative and strategic decision-making. Pirttimäki (2007) asserts that the concept refers to a) information and knowledge describing the business environment, a company itself, and its state in relation to its markets, customers, competitors, and economic issues and b) the process of producing insights, suggestions, and recommendations for the management and decision-makers.

Ghoshal and Kim (1986) view BI as an activity that gathers and analyzes information about competitors, customers, markets, new technologies, and broad social trends. According to

Pirttimäki (2007), BI is about identifying information needs and processing the data and information gathered into useful and valuable managerial knowledge and intelligence. She asserts that through gaining more knowledge of the company itself and its external environment, BI improves proactive decision-making, business planning, and strategy.

2.1.2. Competitive intelligence

Fleisher and Bensoussan (2007) determine Competitive Intelligence (CI) as the process by which organizations gather actionable information about competitors and the competitive environment and apply it to their planning processes and decision-making. Pirttimäki (2007) considers that CI's main use is to help a company assess its competitive and market conditions. McGonagle and Vella (1996) observe that CI gathers information from external sources concerning the competitive situation, market, and strategy.

Fleisher & Bensoussan (2007) assert that CI combines signals, events, perceptions, and data into visible patterns and trends concerning the business and competitive environment. In their view, analysts are central members of the function as they use their skills, knowledge, abilities and instincts to uncover these relationships, thereby enabling their organizations to compete more effectively. This activity can either be simple scanning, such as analyzing a company's annual report and other public documents, or elaborate, like performing a fully digitalized war gaming experience.

CI can be viewed as a progression from raw inputs to finished outputs. It begins with scattered bits of raw, basic data that are then organized by CI practitioners and becomes information. This information develops into intelligence when it is put into a format useful to a decision maker's intelligence needs. CI's objective can be to proactively detect opportunities or threats; eliminate or reduce blind spots, risks, and/or surprises, and reduce reaction time to competitor and marketplace changes. The aim is to ensure that decision makers have accurate, current information about the organization's competitive environment, and a plan for using that information. In this sense, effective CI helps the decision-maker to make a better decision. (Fleisher and Bensoussan, 2007)

Fleisher & Bensoussan (2007) state that CI contributes to the foundation on which strategy and tactics are built, assessed, and modified. It runs across and overlaps other functions, in particular, those associated with marketing, planning, and strategy. Competitor intelligence is a narrower level of CI that focuses on competitor information and aims to facilitate decision-making at the tactical level. However, it can also be utilized in strategic decision-making.

2.1.3. Strategic Intelligence

Miller (1996) and Liebowitz (2006) observe that strategic intelligence (SI) is a term used for intelligence activities in the context of strategic planning and strategic management. SI addresses the needs of high-level decision-makers and it is mainly focused on proactive activities. Viitala and Pirttimäki (2006) observe that strategic intelligence can support strategic management especially by contributing to the collection, analysis and distribution of information. They find that the higher the level of decision making, the more consolidated the information must be and the more conclusions and suggestions should be added to it. Pirttimäki (2007) argues that strategic intelligence is about having a realistic situational understanding and using it to develop a strategy that is appropriate, suits the circumstances and works.

Thierauf (2001) asserts that the goal of SI is to understand where a company is going and how it can maintain its long term competitiveness in the face of future challenges and changes. McGonagle and Vella (1996) assert that SI should act as a radar that alerts the company to threats and opportunities in its external environment. Gilad (2004) also emphasizes SI's role in providing early warnings. Moreover, Herring (1992) points out that SI should contribute to challenging the underlying assumptions that affect a company's strategic thinking, to implementing the strategy and adjusting it to changes in the competitive environment and also to determining when a strategy is no longer sustainable. (Viitala and Pirttimäki, 2006). Liebowitz (2006) adds that SI aims at making the best strategic decisions for maximizing a company's success.

Viitala and Pirttimäki (2006) point out that the existing literature on BI does not sufficiently consider the requirements for strategic information. They observe that the type of information used in strategic decision making often appear as weak signals. This means that they are often qualitative, their information content may not be evident and separate fragments of signals need to be put together in order for them to make sense. Moreover, it is impossible to define

information needs precisely. Consequently, this kind of information cannot be processed in the same way as explicit quantitative data.

In this study, I assume that all levels of intelligence activities can contribute to SI. BI produces the kind of information that is used in strategic, long-term decisions. The concept entails the whole relevant environment of a company, not just the company itself. The scope of CI is narrower and it includes elements of the external environment, such as competitor, industry and market information. CI is sometimes defined as an alternate concept for BI in the literature (see e.g. Gilad, 1996) and McGonagle and Vella (1996) introduce CI as a concept that has been previously known as BI. However, Mintzberg (1994) and Choo (2002) consider CI as a part of BI because BI has a broader scope than CI. Mintzberg (1994) views CI as a synonym for competitor intelligence. Choo (2002) and Fleisher and Bensoussan (2007) argue that as an organizational function, CI ranges in scope between the broader area of business intelligence (BI) and the narrower version of competitor analysis. It is a roof concept for competitor intelligence because CI focuses on competitive and market information in addition to competitor information.

In this study, I view CI as a part of BI and extend its scope beyond competitor intelligence, to cover competitive and market information as well. I situate strategic intelligence as an overarching concept that covers signals coming from all of the levels of intelligence – business intelligence, competitive intelligence and competitor intelligence. Consequently, in this study, I will apply literature from all of the levels intelligence in reviewing the field of SI. The aim of SI is to gather, analyze and disseminate signals that assist decision making on a strategic level. The following figure illustrates the relationship between the concepts:

Figure 1: The relationship between different levels of intelligence (adapted from Fleisher and Bensoussan, 2007)
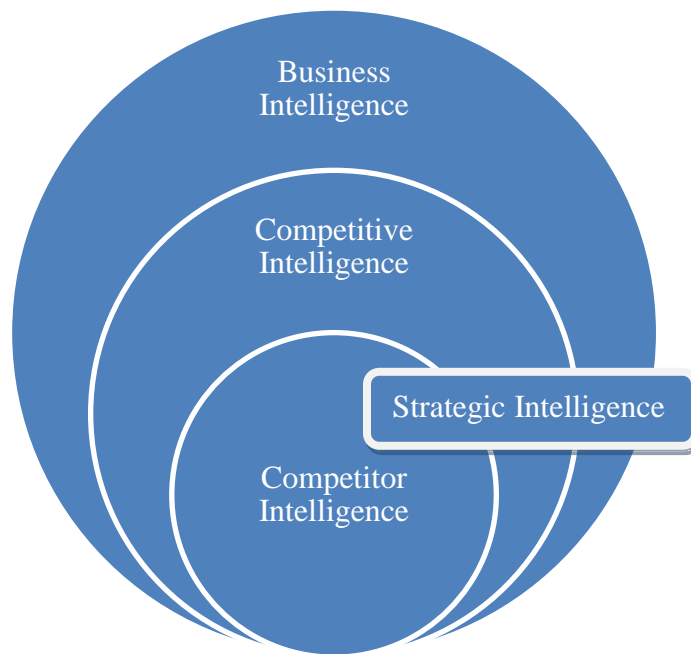
2.1.4. Intelligence activities

Fleisher et al. (2007) assert that the first stage of the intelligence cycle is to plan the intelligence actions. This translates into determining client needs, establishing requirements and developing a plan. The second stage is to collect and process data. In this stage, data is collected from within and outside the firm and the initial classification of the collected data and data reduction are performed. The third stage is to analyze the data. After the analysis stage comes the fourth stage where intelligence is disseminated. Here the generated insights are presented or provided to the customer or client. The final stage is to evaluate and control the process. This can be done through gathering feedback and assessing whether the process has satisfied the client's needs and possibly restarting it if it has failed to do so. Intelligence activities can be summarized into a generic intelligence cycle:

Figure 2: the intelligence process (Fleisher and Bensoussan, 2007)
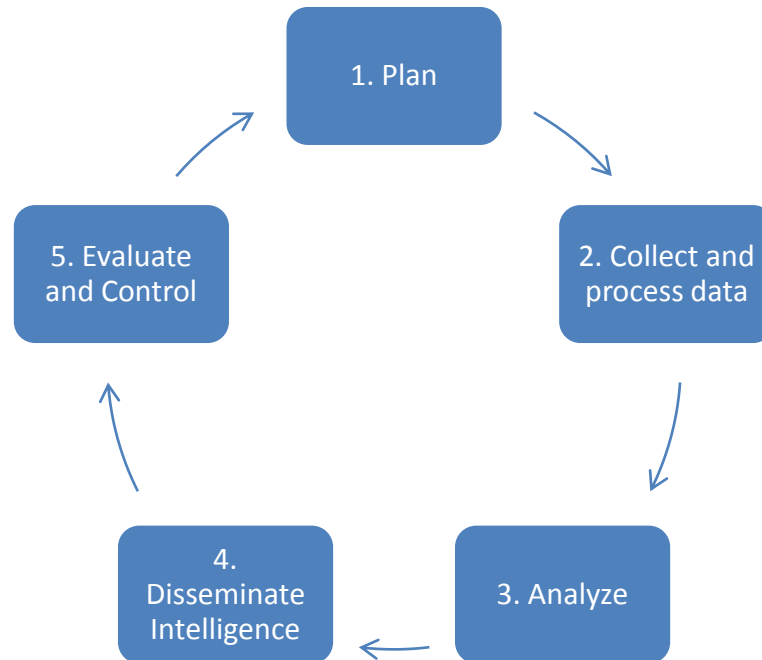
Fuld (1991) points out that only when managers analyze information, compare what they hear with industry models and with their own experience, does information become intelligence. Thus, putting scattered bits of raw data together to form competitor profiles, for instance, adds value and enables managers to make strategic decisions based on true knowledge of the marketplace. It is the task of intelligence activities to provide managers with implications and assessments on which managers can make decisions.

Intelligence analysis at differing organizational levels

Fleisher et al. (2007) assert that intelligence analysis can take place at multiple levels within an organization. Commonly, it is grouped into strategic, tactical and operational levels. Strategic Intelligence Analysis (SIA) is arguably the most important level of intelligence because it creates a framework within which other forms of intelligence collection and analysis take place. SIA helps to discover and understand important trends, to identify patterns and to provide an overall picture of the opportunities and threats in the environment. It also provides guidance for tactical and operational assessments and, reciprocally, the work performed on the tactical and operational levels helps to shape the focus of SIA. As the analysis performed at strategic level matures, it

offers a basis for predictive assessments that can provide a warning of potential high-impact activities.

Fleisher et al. (2007) considers tactical intelligence analysis (TIA) as a necessary and important link between the macro and micro level analysis as it conducts assessments that aid SIA. The lowest level of intelligence analysis is operational intelligence analysis (OIA), which is concerned with specific events and single cases. Helping the analyst understand particular events in real-time, the benefits of OIA are more immediate, but also short-lived. The different levels of intelligence analysis are summarized in the following table:

Table 2: Different levels of intelligence analysis (drawn from Fleisher et Bensoussan, 2007)

Level	Description
Strategic Intelligence Analysis (SIA)	Acts as a framework for other decision levels. Monitors issues that have long-term effects, are infrequently taken, difficult to reverse, resource-intense and far-reaching in nature. SIA is also concerned with competitive positioning.
Tactical Intelligence Analysis (TIA)	Acts as a link between macro- and micro-level analysis with a focus on individual and specified issues. TIA operates at the functional level and supports decision making that is less pervasive than strategic decision making. It involves formulating and implementing policies.
Operational Intelligence Analysis (OIA)	Supports day-to-day decision making that affects the organization for shorter periods of time.

Information analysis

Fleisher et al. (2007) argue that the task of business and competitive analysts is to make sense out of the often ambiguous, complex and challenging matters that are relevant for decision makers. This requires a good analyst to have a robust and healthy repertoire of methods, tools and techniques to help answer important questions on the enterprises' ability to compete at present and in the future. Analysts have to weigh up the odds, work through the scenarios, find out what they know and what their competition knows, and take action. This practically means making sense of, or creating meaning from a typically constrained sample of data and information. Wilson (1999) points out that managers, when faced with volatile situations, tend to draw on their past experiences and intuition and to use decision rules based upon these. He emphasizes that

planning techniques need to be employed in order to challenge these traditional company perspectives and priorities.

Fleisher et al. (2007) find that analysis is the part of the intelligence process where the greatest value is generated. Analysis interacts with data classification and synthesis to produce finished outputs such as charts, graphs, tables, text, summaries and visual or other communicative aids that are appropriate for dissemination. It aims to provide answers to decision makers on questions that are critical for the business. This includes, for instance, information on the current situation, on options available, on the direction the company wants to go to, should go to, how to get there and how to know whether it has arrived there.

Macroenvironmental analysis

Barbosa et. al (2010) argue that strategic decision-makers can challenge conventional wisdom and prepare for uncertainty better through analyzing the complex and not-so-obvious ways global trends interact in their industries. Predicting the future is the most important task facing a strategist - and it is also the most challenging one. One way to tackle the challenge is to examine the demographic, technological, environmental, macroeconomic, and other long-term forces that constantly shape the global business environment. Eye-opening implications are typically found in the interfaces where multiple trends interact.

Fleisher and Blenkhorn (2003) argue that the starting point of any strategic analysis is some form of environmental analysis. The STEEP sector is one way to analyze the environment, covering the social, technological, economical, ecological, and political or legal aspects that impact competitiveness. These factors are usually considered to be beyond the direct influence of an individual organization. The five key sectors and their key variables are summarized in a table below:

Figure 3: components of the STEEP analysis (adapted from Fleisher and Blenkhorn, 2003)

Social	Technological	Economic	Ecological	Political or Legal
• Describes characterisics like demographics, cultural attitudes, age distribution, geographic distribution • The pace of change in this sector can often be slow, but its effects are inexorable and profound	• Describes characteristics like digital communication, biotechnology and energy • Key variables include, for instance, patents held or R&D budgets	• Indicates the distribution and uses of resources within an entire society and is focused on *economic trends*, such as: balance of payment issues, employment rates, exchange rates, and interest rates	• Encompasses both the physical and biological environments within which organizations interact • Key variables include, for instance, recycling capacity or sources of power	• The nature of the competition changes because of both procedural and structural changes • key variables include e.g. the presence of property protection laws and ability to influence political decision making

Fleisher and Blenkhorn (2003) divide the process of applying the STEEP analysis into five steps. The first step is to understand the segment of the environment that is being analyzed - figuring out the key events and trends within the segment and finding evidence to support their existence. The second step is to understand the interrelationships between trends – to look for areas where trends are suggesting redefinitions or changes from the expected or where the trends are reinforcing one another. In the third step, the trends are related to issues. Not all trends are of equal importance to a company or an industry and it is important to identify the trends or trend combinations that are likely to have the highest impact. These are defined as issues. In the fourth step, the future direction of the issues is forecasted and their underlying forces are assessed through distinguishing between symptoms and causes. This stage involves developing alternative projections of the issues through developing multiple projections or scenarios. The fifth step is to derive implications and to note how these implications affect the company's strategy and how they are expected to affect competitors' strategies.

Industry analysis

Porter (2008) asserts that the industry structure consists of five forces: established industry rivals, customers, suppliers, potential entrants and substitute products. Even though industries may appear to be different on the surface, the underlying drivers of profitability – the five forces are the same. In order to understand an industry's competition and profitability, the underlying structure must therefore be analyzed in terms of the five forces. Porter argues that while a large

variety of factors can affect an industry's profitability in the short run, industry structure determines the profitability in the long run. Understanding the industry structure is also crucial for strategic positioning.

Porter (2008) observes that different competitive forces are fierce or benign in different markets. The strongest force or forces determine the profitability of an industry and are the most important to strategy formulation. The five competitive forces are presented below.

Threat of entry: new entrants to an industry bring new capacity and a desire to gain market share, putting pressure on prices, costs, and the rate of investment necessary to compete. This threat is dependent on the entry barriers present and on the reaction that entrant companies can expect from incumbents.

Power of suppliers: suppliers can also restrain the profitability of an industry by charging higher prices, limiting the quality of services, or through shifting costs to industry participants. This is especially threatening in industries that are unable to pass on cost increases in their own prices.

Power of buyers: customers can capture more value by forcing down prices, demanding better quality or more service, and playing industry participants against one another.

Threat of substitutes: Substitutes perform the same or similar function as an industry's products, but by different means. Strategists should be particularly alert to changes in other industries that can make them attractive substitutes when they were not before.

Rivalry among existing competitors: Rivalry among competitors is a familiar threat that shows as price discounting, new product introductions, advertising campaigns and service improvements.

Porter (2008) asserts that by considering these five forces, a strategist can keep the overall structure of the industry in mind instead of gravitating into one specific element. True strategic insights can be derived from answering to questions like which forces are underpinning (or constraining) today's profitability and how shifts in one force might trigger reactions in others.

Competitor analysis

Sheng et al. (2005) state that competitor analysis is used to define and develop a deeper understanding of the industry and to identify and target existing, as well as potential, competitors. This includes determining their strengths and weaknesses and anticipating their strategic and tactical moves. Keiser (1987) infers that the process begins by identifying competitors and figuring out the kind of data that will best illustrate their performance. The next step is to identify the sources for that information, collect it, and integrate the information from all sources. The integration phase also includes analyzing the data and comparing the competitors' potential performance against the forecasts of one's own company. Competitor analysis also entails the identification and evaluation of competitors' current and possible strategies and the design of effective plans as a response to them. Competitors' actions must be monitored and communicated to management continuously so that they can alter the company's operations accordingly.

However, Hamel et al. (1989) point out that competitor analysis typically focuses on present competitors' existing resources (human, technical, and financial) and only those companies who have the resources to erode margins and market share in the next planning period are seen as a threat. They argue that traditional competitor analysis is like a snapshot of a moving car – it yields little information of the car's speed or direction. Assessing known competitors' current tactical advantages will not help to understand the resolution, stamina, or inventiveness of potential competitors. They argue that companies should take note of resourcefulness – the pace at which new competitive advantages are being built.

Scenario planning

Davies et al. (2005) consider scenario planning as an approach that recognizes rapidly changing market conditions and the difficulties they pose for strategic planning. Instead of making accurate predictions and formulating an optimal strategy, scenario planning encourages the building of several possible alternative futures. It is a useful modeling framework when a small number of critical decision variables can be isolated. In order to construct credible, consistent and challenging scenarios, key decision makers within the company should be involved to offer opinions on the most important environmental trends, greatest uncertainties, and decisions that have a great impact on the company. Alternatively, Mercer (1995) suggests that a diverse group

could be involved in identifying the environmental and industry drivers and constructing alternative scenarios.

Ringland (1998) argues that applying scenarios is challenging because scenarios are about ideas, and ideas are notoriously difficult to communicate. The effectiveness of a given communication technique depends on the intended audience and the environment in which they are operating.

Utilizing human-source intelligence

Fleisher and Bensoussan (2007) point out that organizational priorities for analysts and analysis are shifting more towards adding value to intelligence. This translates into putting raw data and information into its relevant context and adding meaning to it. This can be done through building and maintaining expertise, continuity and depth to the analysis. Viitanen and Pirttimäki (2006) discover that networking is emerging as a way to add value to intelligence. Analysts should forge partnerships and build networks with functional and subject experts throughout the organization, to tap into analytical expertise.

Choo (2002) views human resources as the most important information resource since people can filter and summarize information, highlight the essential elements, interpret information and communicate it better than information technology. Gilad and Gilad (1985) also emphasize the need for utilizing people as information sources and point out that this needs to be supported by a formal intelligence system. Viitanen and Pirttimäki (2006) consider that as BI systems collect, store and disseminate information, it is the task of people to understand how this information contributes to decision making and how it can be utilized to make better and faster decisions.

Viitanen and Pirttimäki (2006) have researched how internal information can be utilized in the BI process and how the BI process can be integrated into strategic management. They studied a technology-oriented, global telecommunications company and found that a human-source intelligence network consisting of front line employees is a valuable intelligence asset because employees possess early and interpreted information about the business environment. Information from human sources is received before the same information becomes available from public sources (if it becomes publicly available) and it is more profound in nature. This kind of information was found to complement, confirm, question and provide new aspects to the

information that is already available. However, as information from human sources often appear as weak signals, they needs to be listened to and interpreted correctly.

However, Collins (1997) points out that although providing a valuable asset to the organization, external environment-related information from company internal human sources is often invisible and uncharted, which makes it very difficult to use (Viitanen and Pirttimäki, 2006). Fleisher and Bensoussan (2007) also infer that analysts lack primary sources of information, such as rumors, gossip, grapevine data and knowledge held by employees, that can add value to analysis.

The organization of intelligence activities

Viitanen and Pirttimäki (2006) assert that intelligence organizations are typically composed of communities established around intelligence users, a centralized department of intelligence and functional or operational divisions. The centralized department conducts information collection and analysis both independently and in collaboration with the functional or operational divisions. The centralized department can also act as a hub where all of the collected information is analyzed centrally and then disseminated to users.

Gilad (2004) notes that utilizing company internal information in formal intelligence networks is challenging because the people who are gatekeepers to deep industry knowledge may not belong to the network because, for instance, they are too busy or feel too senior. Furthermore, Collecting information from internal networks may be quite unorganized since people do not know what information should be shared. The networks may also be weakened in time due to motivational problems, which Viitanen and Pirttimäki (2006) find the most serious problem regarding the utilization of internal information. However, Awazu (2004) asserts that these challenges can be, to a certain extent, overcome by having people hold together informal networks and facilitating the flow of intelligence among the networks. Viitanen and Pirttimäki (2006) presume that leveraging the social and personal networks that people already maintain informally can also help solve problems caused by resistance attitudes. Cross and Prusak (2002) argue that informal networks can be developed and managed systemically, as long as certain roles of key players in those networks are paid attention to. Viitanen and Pirttimäki (2006) introduce the following roles for the informal network:

Table 3: Roles in an informal intelligence network (Viitanen and Pirttimäki, 2006; adapted from Cross and Prusak, 2002 and Awazu, 2004)

Role	Main tasks and characteristics
Central connector	Connects people who need information to people who can provide it or have a right to the repository of the information. Usually possesses good intelligence identification capabilities and a good knowledge of the workplace.
Boundary spanner	Connects a local network to other extra-organizational networks through e.g. relationships to central connectors in other informal networks. Enables the sharing of very different types of information that is not restricted to functional expertise and local environments.
Gatekeeper	Screens and filters the information that arrives to and leaves the network. This role often has a negative impact on information transfer in global contexts.
Information broker	Connects people within large networks, plays the role of a boundary spanner, but within a network. Has the ability to easily understand a variety of different information in different contexts.
Peripheral specialist/expert	Possesses deep knowledge of a specific subject. Is often an outsider in the network and works locally.

Cross and Prusak (2002) imply that one person may have several roles in a network or different roles in different networks. Awazu (2004) adds that this makes the flow of information more dynamic. However, Viitala and Pirttimäki (2006) point out that it also makes the management and utilization of those networks extremely challenging. In order to manage the networks, it is essential to identify the people who play the above roles in an organization. Cross and Prusak (2002) assert that one should not attempt to identify all of the informal networks, but rather to focus on the most critical functions and activities in terms of the required improvement in productivity. Moreover, Viitala and Pirttimäki (2006) presume that the more information-knowledge intensive the organizational function is, the more critical it is to manage the informational networks behind it. They consider that a great deal of information may be left underutilized if BI focuses only on gathering and utilizing information through formal mechanisms.

2.2. Decision making

Intelligence activities aim to provide support for decision making, and information analysis forms an important part of that work. Ungureanu et al. (2008) assert that strategy is the main connection between a company's organizational structure and the external environment. In the previous chapters, I have reviewed the field of intelligence activities, but in order to find out how they assist in decision making, it is necessary to take a look at the way decisions are made. This chapter aims to map out the field of strategic decision making through introducing different approaches to strategy. Firstly, I will introduce the analytical approach to strategy. Then, I will represent an alternative, emergent approach to strategy. Finally, I will conclude by introducing the strategic intent –approach.

Service (2006) considers that strategy starts with a vision of what one desires to be at a definitive time in the future. This vision evolves to the development of specific actions necessary to reach the stated vision. These actions, moves or allocations are strategies. Fleisher and Blenkhorn (2003) define strategic management as a way of conducting an organization that aims to develop values, managerial capabilities, organizational responsibilities and administrative systems to link strategic and operational decision making. In this study, I will approach the field of strategic decision making through introducing the fields of strategic planning, strategic thinking and using competitive innovation as a basis of strategy.

2.2.1. The analytical approach to strategy

Porter (1980, 2008) views strategy formation as an analytical process. In his view, strategy work is about understanding the industry structure and claiming a position in the industry that is more profitable and less vulnerable to attack. This may include positioning the company to better deal with the current competitive forces, anticipating and exploiting shifts in the forces, and shaping the balance of forces to create a more favorable industry structure to the company. The best strategies exploit more than one of these possibilities.

Positioning the company: a strategy can focus on building defenses against competitive forces or on finding a position in the industry where the forces are the weakest.

Exploiting industry change: if a strategist has a good understanding of the competitive forces and their underpinnings, it is possible to spot and claim promising new strategic positions as the industry changes.

Shaping industry structure: in addition to recognizing and reacting to the inevitable, a company may also lead the industry towards new ways of competing that change competitive forces to the better. While many participants can benefit from industry transformation, the innovator can benefit most if it can shift the competition in directions where it can excel.

In the analytic approach, strategy comes into being when it is formulated – thus it is something that is done somewhere and then implemented (Fleisher and Blenkhorn 2003). Viitala and Pirttimäki (2006) discover that although there are several models to describe the process of strategic management, certain elements are included in nearly all of them: analyzing both the internal and external environment, strategy formulation, strategy implementation, and evaluation and control. Fleisher and Blenkhorn (2003) introduce the following process for strategic planning:

Figure 4: the process of strategic management (Fleisher and Blenkhorn, 2003)
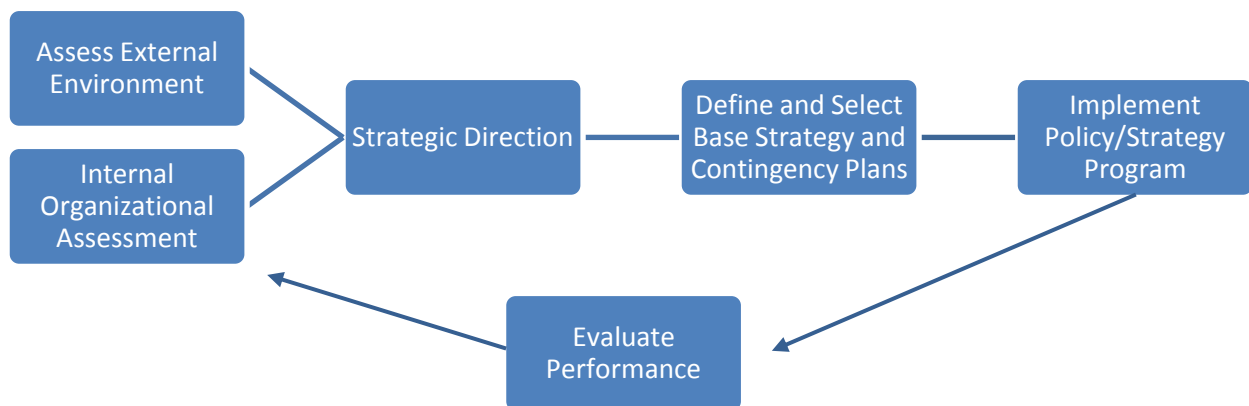
Fleisher and Blenkhorn (2003) assert that the objective of strategic management is to position the company so that it can achieve the tightest fit with its competitive environment (regarding positioning, see e.g. Porter; 1980, 2008). Competitive intelligence aims to assist in generating this form of understanding. However, there is criticism regarding the usefulness of strategic planning. Fleisher and Blenkhorn (2003) assert that in today's fast-changing, fast-paced and competitive world, a lock-step strategic planning approach impedes dynamic and innovative decision making and required marketplace action. Viitala and Pirttimäki (2006) claim that instead of being performed in certain intervals, the strategy planning process should be continuous. Downham (1996) also believes that a company should be able to adjust the strategy on an ongoing basis.

2.2.2. An emergent approach to strategy

In contrast to the analytical approach to strategic planning represented by Porter (1980), Mintzberg (1994) argues that strategy formation can also be emergent. In his view, there is more to strategy than analysis – strategy can be a synthesis drawing from multiple sources of information. The strategy making process should capture what the manager learns from all sources, including soft insights from personal experiences and the experiences of others throughout the organization, in addition to hard data from market research and the like. This learning should then be synthesized into a vision of the direction that the business should pursue, which is called strategic thinking.

In the analytical approach, Porter (1980) argues that analyzing the industry's underlying structure can form the basis for actionable, set plans. Mintzberg (1994), however, asserts that rather than creating strategies, planners should make their greatest contribution around the strategy making process: planners can supply the data, help managers think strategically, and program the vision. They can produce the formal analyses and hard data that strategic thinking requires, but only in order to broaden the consideration of issues rather than to discover the one right answer. Thus, instead of positioning the company based on a clear, structural picture of the environment (see Porter, 1980), the emerging approach employs a more broader brush that allows for picking up, and acting upon, a wider range of signals that can have an impact on the strategy. Brown and Eisenhardt (1998) assert that strategy cannot be regarded as a permanent guideline to a company's long term goals. It is rather about creating a flow of competitive advantages that, taken together, create a semi-coherent strategic direction (Viitala and Pirttimäki, 2006).

Mintzberg (1994) considers that strategic thinking, in contrast to strategic planning, involves intuition and creativity. The result of strategic thinking is an integrated perspective of the enterprise, a vision of direction that is not too precisely articulated. These kinds of strategies cannot be developed on schedule; they must be free to appear at any time and at any place in the organization and they cannot be forced to a cyclical framework of strategic management (see e.g. Fleischer and Blenkhorn, 2003). They typically arise through messy processes of informal learning; carried out by people at various levels of the organization who are deeply involved with the specific issues at hand.

Mintzberg (1994) points out how formal strategic planning is dependent on the preservation and rearrangement of established categories – the existing levels of strategy, the established types of products, overlaid on the current organizational structure. In contrast to Porter's (1980, 2008) approach, Mintzberg (1994) argues that real strategic change requires not merely rearranging the established categories but inventing new ones. Strategy making needs to encourage informal learning that produces new perspectives and combinations. Furthermore, he considers that strategic planning cannot be applied to problem solving without judgment and intuition. Strategic planning represents a calculating style of management, aiming to reduce the power of management over strategy making, in a world that needs a more committing style of management where management engages people and everyone contributes and helps shape the course of the company. He introduces three fallacious assumptions that undermine strategic planning: the fallacy of prediction, the fallacy of detachment and the fallacy of formalization.

Fallacy of prediction: Strategic planning assumes that the world holds still while a plan is being developed and stays on course while it is being implemented. However, even though certain repetitive patterns, such as seasons, may be predictable, the forecasting of discontinuities, like price increases, is virtually impossible.

Fallacy of detachment: Strategic planning is based on the premise that strategies must be detached from operations so that senior managers on high can be informed about the details below without having to immense themselves in them. The solution has been to neatly package and regularly deliver hard data and quantitative aggregates of the detailed facts about the organization and its context. However, work processes must be fully understood in order to program them and so far nobody has bothered to find out how managers really do make

strategies. Furthermore reliance on hard data is problematic, because waiting for confirmation often makes the information late. The data is also often poor, excluding the qualitative elements, and it tends to be overly aggregative, missing important nuances. Consequently, managers who rely on formalized information such as market research reports and accounting statements tend to be detached from the business itself. The most effective managers rely on soft information, like gossip, hearsay, and various other intangible pieces of information.

Fallacy of formalization: Even though formal systems offer a way to process more information, they can never internalize it, comprehend it, or synthesize it. Formal procedures will never be able to forecast discontinuities, inform detached managers, or create novel strategies.

Mintzberg (1994) observes that planners and managers have different advantages in the strategy making process. Planners lack management's authority to make commitments and can access soft information critical to strategy making. Managers, in turn, pressed with time, tend to favor action over reflection, and the oral over written, which may cause them to overlook important analytical information. Even though strategies cannot be created through analysis, they can be developed with it. As planners have the time and will to analyze, they have critical roles to play alongside line managers, but not as conceived in the past. Planners should work as '*soft analysts*', whose purpose is to pose the right questions rather than to find the right answers. That way they open up complex issues to thoughtful consideration instead of their being closed down hastily by snap decisions.

2.2.3. Strategy as competitive innovation

Hamel and Prahalad (1989) infer that all kinds of strategy recipes limit competitive innovation. In their view, strategy is too often seen as a positioning exercise (see e.g. Porter, 1980, 2008) where options are tested by how well they fit the existing industry structure. The current industry structure reflects the strengths of the industry leader and playing by the leader's rules is usually competitive suicide. Assuming a more inward approach to strategy, they argue that a strategist's goal is not to find a niche within the existing industry space, but to create a new space that is uniquely suited to the company's own strengths. They named this approach strategic intent and it aims to force companies to operate more innovatively.

Hamel and Prahalad (1989) find that the value of traditional industry analysis, represented by Porter (1980), for instance, has been undermined by unstable industry boundaries, rapidly changing technology, deregulation and globalization. However, they see that an industry in turmoil presents opportunities for ambitious companies to draw the map in their favor, providing that their thinking extends outside traditional industry boundaries. Managers cannot restrain themselves by simply playing the same game better. Instead, they must fundamentally change the game in ways that disadvantage the incumbents. This way of thinking extends beyond Porter's (2008) analytical approach to strategy. Instead of searching for opportunities in the existing structure, the strategic intent –approach aims to find a more unique solution. This can be seen to comply more with the emerging approach to strategy, represented by Mintzberg (1994).

The strategic intent –approach has a different way of analyzing of the business environment than Porter's (2008) five forces framework, but the analysis is still structured. Hamel and Prahalad (1989) assert that in order to guide actions in the medium term, specific corporate challenges should be determined in the business environment. These challenges can be determined through analyzing competitors as well as from the foreseeable pattern of industry evolution. They reveal competitive openings and help to identify the skills an organization will need in order compete with better-positioned players. These strategies employable can be divided into four approaches to competitive innovation:

1. *Building layers of advantage:* The wider a company's portfolio of advantages, the less risk it faces in competitive battles.
2. *Searching for loose bricks:* analyzing the competitor's definition of its served market and its most profitable activities, determining which geographic markets are too challenging to enter and so forth. The objective is not to find a desert niche in the market territory that the industry leaders occupy, but to build a base of attack just beside it.
3. *Changing the terms of engagement:* companies do not have to accept the front runner's definition of industry and segment boundaries.
4. *Competing through collaboration:* Competitive collaboration can, for instance, be used to hijack the development efforts of potential rivals or to calibrate competitors' strengths and weaknesses.

Furthermore, Hamel and Prahalad (1989) stress that in the strategic intent –approach, the whole organization needs to be engaged to focus on the specified corporate challenges. This is consistent with the emergent approach to strategy (see Mintzberg, 1994). It is no longer seen that strategy can be planned somewhere at the top and then communicated, as implied by Porter (2008, 1980) and the planning school of strategic management. Hamel and Prahalad (1989) assert that in order to engage the whole organization, top management needs to do the following:

1. *Create a sense of urgency:* weak signals in the environment should be amplified to emphasize the need to improve, instead of allowing inaction to precipitate to a real crisis.
2. *Develop a competitor focus at every level through a widespread use of competitive intelligence:* every employee should be able to benchmark his or her efforts against best competitors in order for the challenge to become personal.
3. *Provide employees with the skills they need to work effectively:* employees should be trained, for instance, in statistical tools, problem solving, value engineering, and team building.
4. *Give the organization time to digest one challenge before launching another:* even when competing initiatives overload the organization, they should be carried through.
5. *Establish clear milestones and review mechanisms to track progress:* the challenge should be made inescapable for everyone in the company.

Hamel and Prahalad (1989) consider that the strategic intent assures consistency in resource allocation over the long term, clearly articulated corporate challenges focus individuals' efforts in the medium term and competitive innovation helps reduce competitive risk in the short term. This structure is more flexible than Porter's (2008) analytical approach to strategy, seeing that it allows for some fine-tuning, but as there are guidelines for every time frame, the strategic intent -approach can be seen as a bit more structured than the emerging approach to strategy (see e.g. Mintzberg, 1994).

2.3. Utilizing strategic intelligence in decision making

Viitala and Pirttimäki (2006) assert that successful strategic decisions and actions require proactive information and knowledge that provides a view of possible futures. In their view, this information is partly produced in the SI process. The literature on strategy reviewed above

suggests that gaining a picture of the business environment is important in strategic decision making, regardless of the approach to strategy employed.

The analytical approach to strategy (see Porter, 2008) builds upon an understanding of the industry structure and SI can be seen to assist in building this understanding. For instance, Gilad and Gilad (1985) assert that the goal of the business intelligence process is to produce information that can be utilized in the strategic positioning of the company. The focus is more on the external environment, and thus the level of intelligence employed could be assumed to be more on the competitive intelligence side. CI aims to ensure that decision makers have accurate and current information about the competitive environment and a plan for using that information (see Fleisher and Bensoussan, 2007). It could help provide information to support the positioning of the company in the light of current competitive forces, anticipate shifts in the forces, exploit them and shape the balance of the industry structure (see Porter, 2008).

Following Mintzberg's (1994) view of strategic decision making in the emergent approach, intelligence activities could provide assistance by assuming some of the responsibilities of planners: it could help gather information – both hard data and soft insights – from a wide range of sources in order to broaden managers' consideration of issues. In this sense, seeing that both internal and external information is needed, emergent decision making can be seen to require intelligence on the broadest, business intelligence level, covering both internal and external information (see Ghoshal and Kim, 1986 and Gilad and Gilad, 1986). Mintzberg argues that strategy emerges through messy, uncyclical processes of informal learning carried out by various people in the organization. SI could help in the process by, for instance, leveraging company internal information through consulting experts in the company (see Choo, 2002; Gilad and Gilad, 1985 and Viitanen and Pirttimäki, 2006). Extending the scope of information gathering beyond public sources to include internal information would also ensure that the information would be early and more profound (see Viitanen and Pirttimäki, 2006)

The strategic intent –approach, in turn, has a more inward view of competitiveness (see Hamel and Prahalad, 1989) and, consequently, it could be assumed that SI could help by producing more internal information on the company's own strengths, for instance. Hamel and Prahalad (1989) question the value of traditional industry analysis as boundaries are becoming more unclear and the environment is characterized by rapid change, deregulation and globalization. Instead of

analyzing opportunities in the existing industry structure (see Porter, 2008), they argue for finding a more unique solution – a space that is off the map. As the strategic intent -approach builds upon the definition of specific corporate challenges; SI could help by producing information on competitors and industry evolution (see Hamel and Prahalad 1989).

However, Fleisher and Bensoussan (2007) point out that analysis is not always recognized as mission-critical – it is often called something else or the process is embedded in other activities. Viitala and Pirttimäki (2006) observe that BI literature mainly focuses on the collection of information but its integration to support existing business processes is rarely studied – no integrated process models of BI and strategic management exist in the literature.

Viitala and Pirttimäki (2006) argue that instead of regarding BI and strategic decision making as separate processes, they should be integrated into a continuous cycle that fosters strategic learning. BI should be organized in a way that leverages the advantages of both formal organization and informal networks. This can be done through recognizing the people who play critical roles in the informal BI network and supporting the network with a defined structure. They suggest establishing a global coordination function connected to decentralized information collection networks that have their own local coordinators. Their proposed BI structure consists of five roles. The people who have access to non-public external information are internal gatekeepers. Boundary spanners are intelligence coordinators of the regional or functional network they belong to, possessing specific understanding and knowledge of their area. Global coordinators, in turn, coordinate the intelligence network and activities at the corporate level, using their wide access to information from several areas. Furthermore, experts are utilized in analyses, and strategic decision makers are seen as the end users of the information processed in BI. This organization is summarized in the following figure, drawn from Viitanen and Pirttimäki (2006).

Figure 5: Information flows in the strategic BI process (as presented in Viitanen and Pirttimäki; 2006, 341)
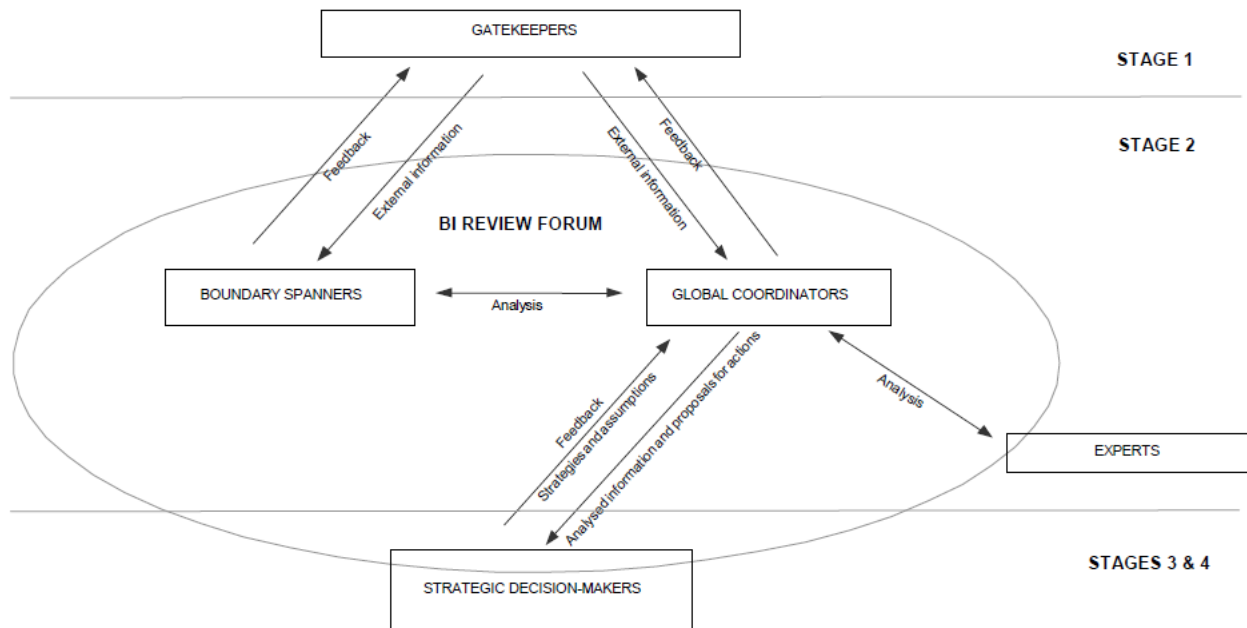

Although the framework presented above is drafted for BI, I consider it to be applicable in reviewing SI as well. In their framework, Viitanen and Pirttimäki (2006) propose that internal gatekeepers should forward the information they receive either to their network's boundary spanner or directly to the global coordinator. Analysis is conducted in cooperation with boundary spanners and the global coordinators so that both the local and functional aspect of the issue as well as the global view are taken into account. This cooperation is further facilitated by establishing a BI forum that serves the company level strategic decision making by regularly going through external information from human sources, comparing it with public information, considering its implications and giving proposals for action for strategic decision makers who, in turn, further discuss them and make decisions. The forum also consults experts on the issues and one or two strategic decision makers are also present in order to have valid suggestions for actions. The forum is concerned with strategic level issues. It combines the information flows to a condensed whole of analyzed, actionable information that is made available for strategic decision makers. Ideally, information would also flow backwards between the actors: strategic decision makers would give feedback on received information and communicate the strategy and the assumptions that it is built on to the rest of the company. Global coordinators can facilitate this communication of strategy through passing it on to boundary spanners. Consequently,

boundary spanners can, in addition to passing on information from the BI network, also share this strategic information received from the global coordinators. Fleisher and Bensoussan (2007) infer that in an ideal situation, analysts are deployed on-site and have regular contact with managers, negotiating teams and front-line decision makers. This kind of interaction helps to better target the intelligence efforts and ensures that analysts understand shifting agendas, prime movers and receive quick feedback on their outputs.

However, it is important to note that there is a lack of models describing the integration of SI in strategic management, and Viitala and Pirttimäki's (2006) framework is one of the few that exist. Furthermore, this framework is presented as a managerial implication in their study and thus it is not tested in practice. However, I found it to be a good basic model of the subject and as an adjustment, I added external boundary spanners, who connect the company's networks to extra-organizational networks (see Viitala and Pirttimäki's model adapted from Cross and Prusak (2002) and Awazu (2004)). Moreover, I see that in Viitanen and Pirttimäki's (2006) suggested network, the global coordinators also act as central connectors and that internal boundary spanners also act as information brokers, connecting people within large networks.

Thus, for the purpose of this research, I have created an organizational framework that is similar to Viitanen and Pirttimäki's (2006), but the concept of BI has been switched to SI and the framework also includes the role of external boundary spanners as a source of information from external networks. Below is the adjusted model of organizing SI for strategic management:

Figure 6: the organization of SI activities (adapted from Viitala and Pirttimäki (2006), Cross and Prusak (2002) and Awazu (2004).
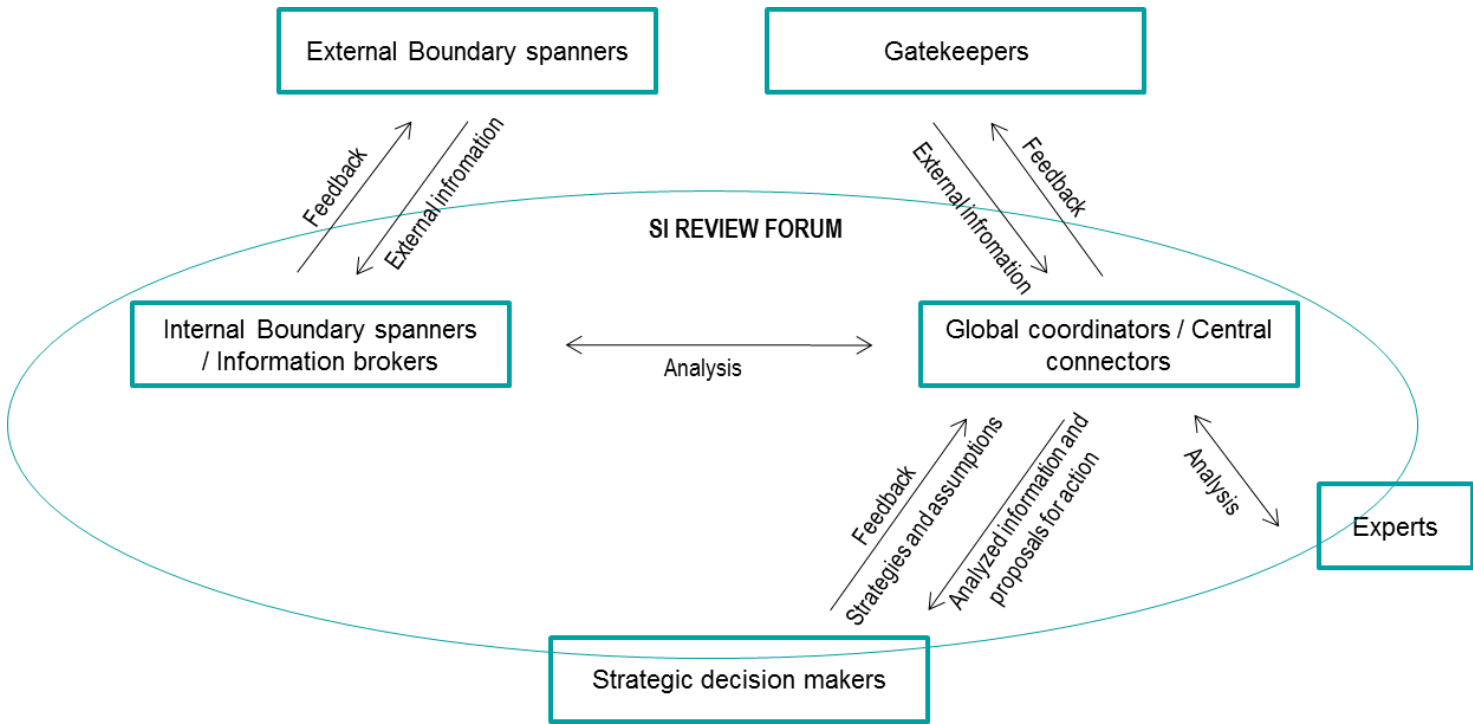
Choo (2002) asserts that according to the outcomes of the decision, strategic learning should emerge as information selection criteria is adjusted and existing beliefs, assumptions and strategies are changed. Viitala and Pirttimäki (2006) consider that to start with, BI should determine decision makers' information needs in order to form guidelines for gatekeepers, so that they can identify the most essential strategic information. They find that employing a centralized approach to organizing BI would help to consolidate information and to reduce the amount of it is disseminated to strategic decision makers. Having a centralized BI function also helps to avoid the distortion of data, since one actor can compare information from several sources. However, Viitala and Pirttimäki (2006) adopted a fairly straightforward approach to the strategy process, following the planning school perspective of strategic management. They point out that adopting other approaches to strategy could yield different observations and implications.
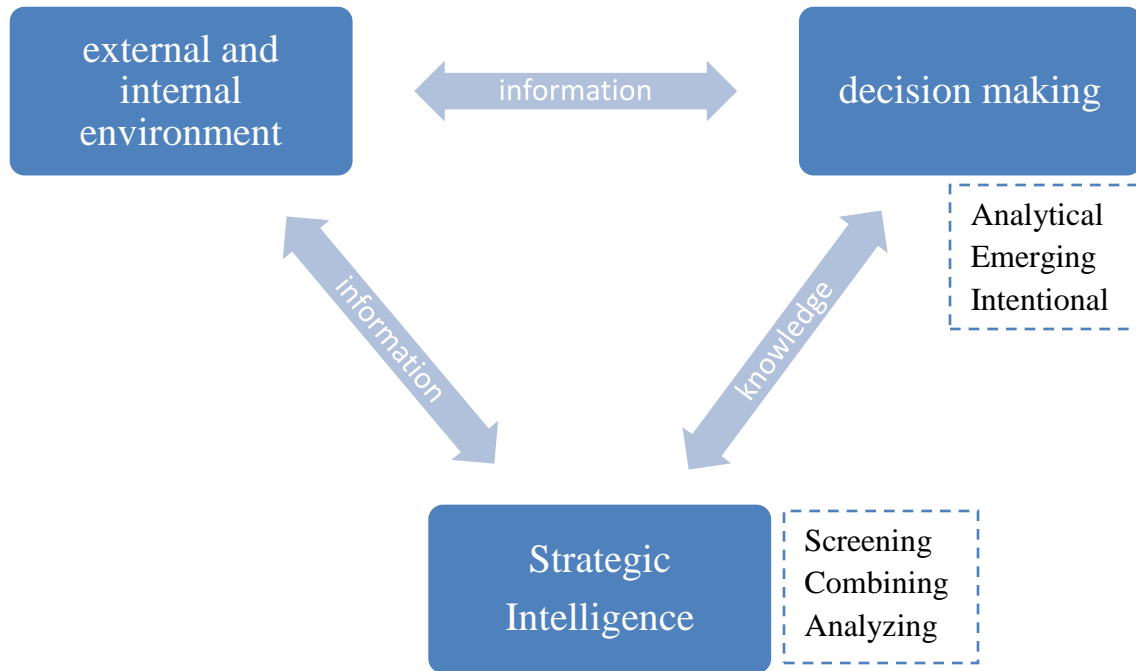
For instance, representing a more emerging approach to strategy, Mintzberg (1994) states that plans can also be used as tools to communicate and control and for coordination purposes to ensure that everyone in the organization pulls in the same direction. He indicates that planners can function as *strategy finders*, assisting managers in finding the small threads of strategy that

emerge in a company without the intent or sometimes even the awareness of top managers. This view of strategy planners' role seems similar to the objectives of SI.

In fact, Mintzberg (1994) infers that planners can also function as *analysts*. In his view, strategic planners are obvious candidates for studying hard data and ensuring that managers consider the results in the strategy making process. This may include industry or competitive analyses, as well as internal studies. Mintzberg points out that some of the best models that planners can offer management are simply alternative interpretations of the world. Planners act as *catalysts* by encouraging managers to think about the future in creative ways, urging them to question conventional wisdom and by helping them to get out of conceptual ruts. In order to do this, planners may need to use provocation or shock tactics like raising difficult questions and challenging conventional assumptions. In this sense, intelligence activities and strategic planning have very similar or identical objectives and thus SI can be seen to serve emergent strategy work through assuming some of the planning work.

On the basis of the literature review, I have drafted the following framework for the study. It is composed of three main elements: the external and internal environment, strategic intelligence and decision making. Strategic intelligence gathers information on the external and internal environment, screens it, combines it and analyzes it. Then, SI communicates the resulting knowledge to decision makers who then, in turn, apply it to their decision making, that may be either analytical, emerging or intentional.

Figure 7: Framework for the study

external and internal environment

← information →

decision making

Analytical
Emerging
Intentional

information

knowledge

Strategic Intelligence

Screening
Combining
Analyzing

METHODOLOGY

This chapter describes the research methods used for gathering the empirical material for the study. I will first describe the research process and then introduce the data and analysis used in this study. To conclude, I will review the quality of the empirical research.

3.1.　Research process

The research process began with me wanting to conduct a thesis study for my employer, XYZ's Group Strategy Department. At first, topics relating to leadership were negotiated on both sides but eventually no mutually benefiting research subjects were found. Then, I decided to focus more on my own work tasks in XYZ's Strategic intelligence (SI) function and suggested doing research that would relate to the utilization of SI in decision making. I felt that Strategic Intelligence could be a more natural and perhaps familiar field for conducting research, since I had accrued some experience of the field through my work experience. On XYZ's side, there was an interest towards identifying how the SI function could be improved to better serve decision makers inside the company, and this topic served my interests as well. Thus, we agreed to conduct a study that focuses on how strategic intelligence supports decision making and strategy work, and how this could be improved.

The thesis research aims to create valuable insights to the case company's management and to assist in developing the strategic intelligence function. The subject has not so far been studied to a large extent, which also enables this study to contribute to the research field of Strategic Intelligence and strategy work.

The research was qualitative in nature and it was performed as a single case study. I chose to apply a qualitative research method in order to better answer the research questions posed. Kumar (2008) argues that qualitative research is applicable for instance when the study aims to investigate reasons for human behavior, to discover underlying motives and desires or to study attitudes or opinions. That is the case in this study.

Robson (2002, 178) defines the case study method as a research strategy that involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence. Investigating how decisions are made and what is SI's role in the process fits well into this description. I chose to focus on one single case because that allowed me to study the subject in more depth and to better answer the research questions. I consider SI activities to be very organization specific, which is why I preferred to research the function in one organizational context instead of many. This way, I could also be sure that all of the interviewees have similar context factors influencing their work. In the study, I described this topic from an internal viewpoint because I work in the function studied.

The most important empirical content in this study will come from interviews with XYZ's top management. This data is collected through semi-structured interviews that are built around themes from a framework drawn from the literature review. In addition to the interviews, company internal and public documents have also been used as background material and the study also utilizes the results of two former SI surveys. This secondary material describes the company and its SI function. Previous research in the field of SI and strategy has been utilized in interpreting the findings from the interviews. As I am employed by the case company and work in the Strategic intelligence function, I also utilized participant observation to guide the research process and to provide background material.

Saunders et al. (2003) assert that in semi-structured interviews, the researcher has a list of key themes and questions to be covered, although they may change from interview to interview, depending on the context. In the interview situation, the order of the questions may vary depending on the flow of the conversation and additional questions may also be required to explore the research question and objectives. As the research studies decision makers' personal preferences and behavior, I believe that semi-structured interviews are the most suitable method for collecting the data. Furthermore, I chose to use semi-structured interviews in order to make sure that some key areas of information are collected from all interviewees. I also wanted to conduct the interviews in a manner that resembles more a discussion than a formal research situation. As the interviewees are experts in their field, I did not want to restrain their answers into ready-made categories. Using semi-structured interviews enabled me to build a deeper

understanding of the subject since the interviewees were free to bring up the most important factors themselves.

As there was no need to make a statistical generalization to any population beyond the sample surveyed, the interviewees were selected using non-probability samples (see e.g. Robson, 2002). In fact, the selection of interviewees was done by the case company. The 14 people interviewed were all members of the company's top management and the sample included managers from all business segments and relevant support functions, such as HR and Investor Relations. This enabled the research to form an overall picture of the whole organization, from the top management's perspective.

As mentioned above, semi-structured interviews allow for altering the interview questions based on the situation at hand. In the interviews conducted, I somewhat altered the questions in each of the interviews, asked new questions or left some questions out, depending on the interview situation and the respondent's responses. However, I went through the same key themes in all of the interviews. The lists of the semi-structured interview themes and questions in Finnish and in English can be found at the end of this thesis as appendices. The interview template was based on relevant theory drawn from the literature and it was carefully revised with the case company's SI representative in order to ensure that all the necessary themes were included, that the questions asked were relevant and formed in the right way. In the interview situation, the questions were formulated in a conversational manner and new questions were posed, as needed, to further specify the answers. All of the interviews were conducted during January 2011 and the duration of the interviews varied from one hour to one and a half hours.

3.2. Data and analysis

I aimed to use a variety of sources in the study in order to enrich the analysis of the material and to gain a better picture of the phenomenon studied. The interviews and participant observation formed the two sources of data that is unique for this study. Material from internal and public company documents was also used to support argumentation on a general level, but this material was originally created for different purposes. These secondary data sources were mainly used in presenting the case company on a general level and to guide the research before the thematic interviews were conducted. Some of the findings from the interviews were also compared with

the results from the previous internal BI surveys. The following table summarizes the data sources used for this study and their utilization in the research process.

Table 4: Data sources used in the study

Data sources	Utilization in the research
Interviews	The material derived from thematic interviews formed the cornerstone of this research. I conducted 14 interviews that lasted between 45 minutes to 1,5 hours.
Participant observation	As an employee in the case company's Strategic Intelligence function, I utilized participant observation as a source of data in the research. However, participant observations were mainly used to support findings from the interviews as I decided to put more emphasis on the interviews than participant observation.
Company internal documents	Company internal documents created by the Business Intelligence function and material from the company's intranet were also used in the study. This material was mainly utilized in describing the case company and its SI function on a general level.
Company's publications	The company's publications were also used to support the empirical part of the study. This material was mainly gathered from the case company's web site and utilized in the beginning of the empirical part of the study to describe the case company and its operations on a general level.

All of the interviews were taped either digitally or by a tape recorder. One interview was conducted as a videoconference and the audiotape was saved as a digital file. All of the interviews were transcribed and the transcripts were made to accurately replicate the interviews word-to-word. During the interviews and the transcribing process, recurring key findings were noted and these findings were further developed through iteratively processing the interview transcripts to find suitable quotes to back them up. These quotes were then grouped together and

compared with each other in order to gain a better understanding of the finding. Then, one or two of the most descriptive quotes were chosen to back up the argumentation in the empirical part. Only those quotes that were used in the empirical part and were from interviews conducted in Finnish were translated. These recurring themes – whether they were problems that the managers had experienced or improvement suggestions – became to form the key findings of the study.

Saunders et al. (2003) assert that data collection and analysis can be approached from either a deductive or an inductive approach. In a deductive approach, the research project begins with using existing theory to shape the approach to the research process and to data analysis. In the inductive approach, the researcher seeks to build a theory that is adequately grounded in the data. This study is more deductive in nature since I utilized existing theory in formulating the research questions and objectives. Moreover, the theoretical propositions were used to create a framework for the study that was used in organizing and directing the analysis of data (see e.g. Yin, 2003)

3.3.   Quality of the Empirical Research

In order for the research findings to be of value, the reliability and validity of the study have to be taken into account. Easterby-Smith et al. (2002) assert that assessing a study's reliability relates to figuring out whether the measures yield the same results on other occasions, whether similar observations can be reached by other observers and whether the way sense was made from the raw data is transparent. Validity, in turn, is concerned with whether the findings are really about what they appear to be about (see Saunders et al., 2003). It relates to figuring out whether other variables also affect the causal relationship and whether findings are equally applicable to other research settings, such as other organizations.

Regarding reliability, the research process and the methods used for analyzing the data are clearly described in the chapter above. The findings of the study were mainly points that came up in several interviews and thus they are more reliable as they are not dependent on a single person's opinion. Some of the interview findings are also supported by participant observations and secondary material from the previous internal SI surveys. I decided to use a variety of data sources in order to improve the reliability and validity of the research and to enrich the analysis of data.

The key findings emphasized in the study are supported by either direct or translated quotes from the interview transcripts. This gives the reader the opportunity to evaluate whether the conclusions drawn from the material are accurate. The use of the selected quotes presented in the empirical part has also been confirmed with the interviewees after the interview. The selected quotes were sent to them by e-mail and every interviewee agreed that they can be used in this study. One interviewee made corrections to his quotes, which were noted and corrected. Furthermore, using the literature review to guide the research questions and in analyzing the findings also helps to support the reliability of the research. The validity of this study is mainly based on the research methods employed. In the sections above, I have argued for the suitability of a single case method and the utilization of semi-structured interviews in this study. Although the results are specific to XYZ and therefore not generalizable to a large extent, I believe that conducting a single case study allowed for a more in-depth review on the subject, which proved to be more valuable for the case company.

However, Koskinen et al. (2005) point out that the reliability of qualitative research can easily be questioned because the researcher has such a strong role in the research process and in interpreting the data. I have tried to address this issue through acknowledging the risks of distorting the results with personal biases and several measures have been taken to reduce possible bias and distortion. For instance, I have transcribed all of the interviews and used a lot of direct quotes to back up the argumentation in the findings section. Furthermore, I have also held a joint meeting with the interviewees to discuss the main findings of this study. In this event, managers seemed to also agree with the findings and the results of the study.

There is an earlier connection between myself and the case company as I am employed by XYZ and work in the Business Intelligence function. This poses both threats and opportunities regarding the validity and reliability of the research. On one hand, my role as an employee may bias the research findings into the case company's favor. However, I aimed to reduce this by trying to assume a neutral stance the interviews and restraining from providing any potentially misleading opinions. On the other hand, my role as an insider in the case company may have encouraged more open responses from the interviewees. The interviewees were receptive and welcoming and seemed very eager to improve the function studied. Although I had not met all of the interviewees in person before the interviews took place, I felt that my insider role enabled a

more open atmosphere in the interviews, encouraging the interviewees to express their opinions more freely. Finally, there was no direct reason for me to distort the results in one way or the other, since the atmosphere was more about mapping out the situation instead of building a business case for a project, for instance. For this reason, it can be claimed that the research was not distorted by the researcher's behavior. The interviews were all conducted by the same person, which ensures that there was no variation in the interview styles that could have affected the results.

However, language issues may provide a threat to the validity and reliability of the study. Many of the interviews were conducted in Finnish and some of the selected quotes that are used in introducing the empirical findings were translated from Finnish to English. This translation process might have caused slight changes in the tones of the interview data or caused misunderstandings.

The shortcomings regarding the reliability and validity of this qualitative study have been largely addressed through the extensive use of direct quotes from the interview transcripts. The vast amount of empirical data was found very valuable and it was seen that it should be utilized as much as possible. The quotes were selected to illustrate and further specify the key findings. This not only makes the text more interesting, but it also ensures that the voice of the interviewees is heard and reduces the possible bias or distortion caused by the researcher.

This is a particular concern in my study since it is a case study of one organization. However, Saunders et al. (2003) point out that in such cases, the purpose of one's research need not be to produce a theory that can be generalized to all populations. Rather, a researcher's task can simply be to try to explain what is going on in his or her particular research setting. This approach is more suitable for my study.

The Empirical Study

This chapter represents the empirical findings of my study. In the following chapter, I will introduce the case company. The second chapter examines the empirical findings of the study.

4.1. Introduction of The case Company

In this section, I will describe the case company's business environment, present an overview of the company and describe the company's strategic intelligence function in chapter.

4.1.1. The Business Environment

XYZ Corporation is a global supplier of technology and services for various heavy industries. The company's operations are affected by global megatrends, such as the redistribution of economic power, new competitors in global markets and changes in supply chains. It is evident that the focus of economic growth is shifting away from developed markets and being distributed more evenly among more countries and regions. Consequently, global industrial companies, including XYZ, have clearly strengthened their presence in emerging markets. The emerging markets are also creating new and competitive players for global markets. These companies have been found to be very adaptive and as the number of competitors grows, product life cycles are becoming shorter and innovations are created faster than before. Finally, the globalizing economy is also changing the ways in which markets operate and affecting value chains. Different economies and their players are in closer contact and more dependent on each other. (XYZ's Annnual Report 2010)

4.1.2. Company overview

XYZ has engineering, production, procurements, services, business, sales and other operations in over 300 units in more than 50 countries. The company employs about 30 000 people that serve customers in over 100 countries. At present, 45% of its net sales come from the service business. XYZ's net sales in 2010 were more than EUR 5, 6 bn. The company's strategy aims for

sustainable, profitable growth over the long term. In the short term, it states to be focusing on improving its competitiveness and cash flow, and securing its profitability. (www.XYZ.com 1)

XYZ's operations are organized in three segments. Its strategy is based on a long-term frame of reference that is formed by the company's purpose, values, Code of Conduct and vision. (intra.XYZ.com 1). XYZ's purpose is to contribute to a more sustainable world by helping its customers to process materials into valuable products (www.XYZ.com 2). The group's strategy aims to secure profitable growth over the long term. These efforts are based on the company's comprehensive product and service offering, its extensive installed equipment base and its strong presence in emerging markets. In its efforts to implement this strategy, XYZ focuses on the following key strategic themes: strong development of the services business and environmental solutions and strengthening its global presence. (XYZ's Annual Report 2010). They define the key areas and priorities in customer satisfaction development and operational excellence that are an imperative for profitable growth. (www.XYZ.com 2)

In its internal communication, XYZ emphasizes the need to be strategically agile. This means thinking and acting in new ways and adjusting to the changes in the business environment. The company acknowledges that traditionally, strategic agility has not been its strongest side but it is seen as vital for implementing the strategy. Decision-making at XYZ needs to be faster and it is important for the company to interpret signals from the customers and businesses in its global network and to better respond to them. The challenge is to better understand the business in management processes. (intra.XYZ.com 2).

The focus of this study is on decision-making in the upper organizational levels at XYZ. The company's management comprises the President and CEO, the XYZ executive team, XYZ Executive Forum and Business line and reporting segment management.

4.1.3. Strategic Intelligence at XYZ

In this chapter, I will map out the strategic intelligence activities in the case company, XYZ Corporation. SI activities in XYZ have until recently been referred to as Business Intelligence, which is why the interviews have been conducted by using the term BI instead of SI and the

interviewees refer to the function as BI. The term BI is also used in most of the company internal material that has been utilized in this study.

XYZ's Strategic Intelligence is a part of the Group Strategy Department that is led by the Senior Vice President of Strategy and M&A. The function aims to ensure the availability of information on the surrounding business environment, covering markets, main competitors and major customers (intra.XYZ.com 3). According to XYZ's Corporate BI Process Description (2008), the function's primary responsibility is to provide critical business information with high informative value and analysis content to its customers.

The function's customers include the board of directors; XYZ's CEO, CFO and the SVP of strategy and other executive team members. The centralized SI function also serves SI functions in XYZ's business areas regarding macroeconomics and XYZ level common themes. The function's customers also include Investor relations, Corporate communications and Technology and M&A functions.

According to XYZ's Corporate BI Process Description (2008), XYZ's SI is responsible for organizing its resources and processes in an effective way. This requires the constant monitoring on its customers' needs, maximizing the value added through quality analysis, minimizing routine work and optimizing the outsourced services. The function also identifies and consolidates common XYZ-level information needs regarding outside information providers and consolidates them into one service contract, utilizing the company's purchasing power.

XYZ's SI is organized as a Strategic Intelligence Network (SIN) that consists of SI-functions within each of the three segments and centralized activities at the Group Strategy department. Corporate level SI is responsible for the effective functioning of the SIN and it coordinates efforts between business areas, enabling the exchange of information and best practices. All information and analysis from the business areas and corporate level are to be disseminated through the SI-functions within each business area. (XYZ's Corporate BI Process Description, 2008).

The following figure, adapted from XYZ's Corporate BI Process Description (2008), describes the operational framework for BI activities in XYZ:

Figure 8: The operational framework for BI at XYZ (adapted from XYZ's Corporate BI Process Description, 2008)
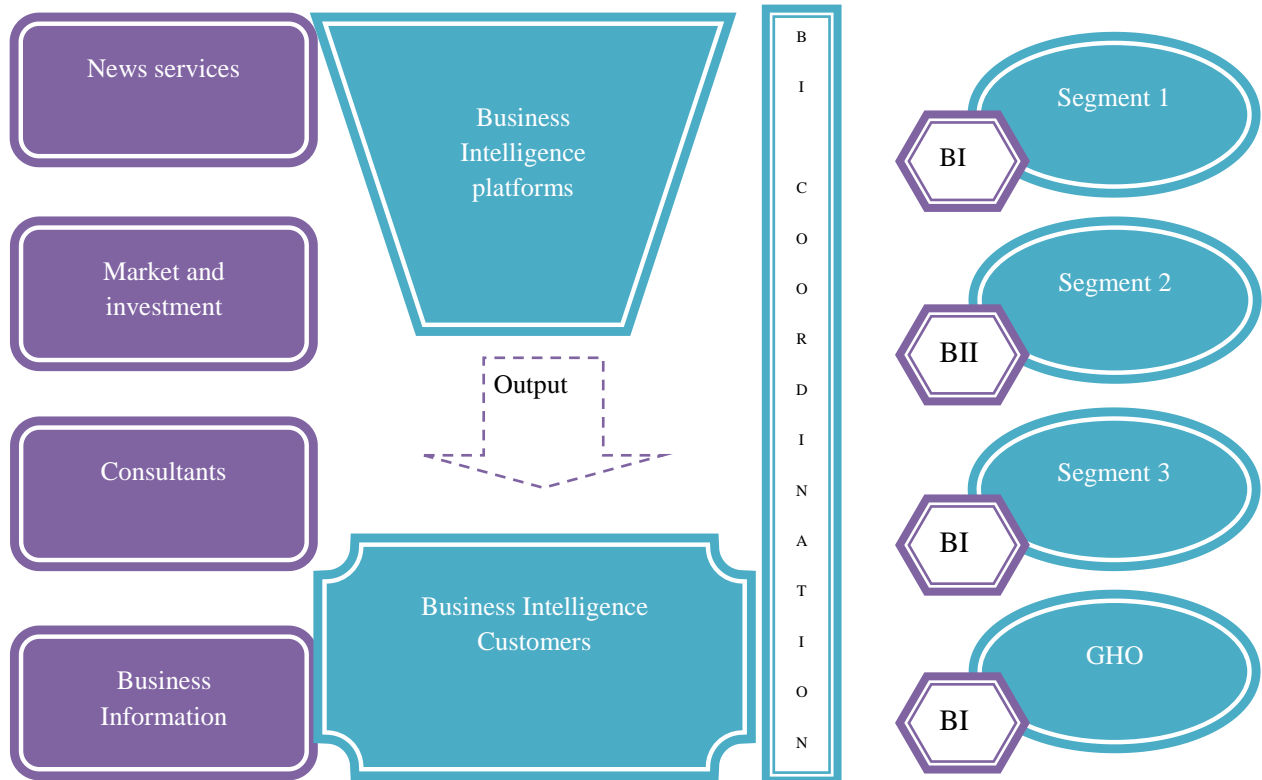
The most used interface for XYZ's SI services is a news monitoring portal called XYZ Intelligence Plaza. The Plaza functions as a daily source of market information and provides news from XYZ's customer industries, internal and external reports and analysis of XYZ's market development. Its purpose is to be a source for information searches for analyses, yearly planning or reports. Plaza users can either visit the service site or receive their chosen scope of news and reports as alerts by e-mail. (XYZ Intelligence Plaza User Guide). This portal is outsourced from an external SI service provider.

XYZ's SI service scope covers the monitoring of general macroeconomic developments and forecasts, the competitive environment and trends and forecasts in XYZ's customer industries, customers' financial performance, and their investment capability and plans. The function also aims to track adjacent business segments and their estimated development potential compared to XYZ's core businesses. The SI function also monitors strategic themes that the XYZ Executive Team and Corporate Development have defined. (XYZ's BI Process Description 2008).

XYZ's SI produces a variety of internal reports. *XYZ's Macroeconomic Environment report* is a monthly review of the previous month's news and signals in the global macroeconomic environment. Its purpose is to help XYZ monitor and disseminate information and forecasts on macroeconomic indicators, materials or commodities prices. (XYZ Corporate Business Intelligence Process Description, 2008). *XYZ Business Environment review* is a quarterly review that consists of a Macroeconomic Environment part, drawn from XYZ's Macroeconomic environment report, and segment specific sections. (XYZ Business Environment Review Q210). XYZ also publishes segment specific *Business Intelligence Reviews* every month. These reports vary from segment to segment, but generally they summarize last month's news and signals regarding markets, competitors, and customers, and introduce changes in the business environment (secure.intelligenceplaza.com/XYZ). In addition to these frequently published reports, XYZ's SI also composes a yearly *World Around XYZ –report*, which has come out in 2010 and 2009. It is a comprehensive review of important megatrends in XYZ's business environment and their effects on XYZ's customer industries. (WAXYZ 2009, 2010).

4.2. Findings of the study

In this section, I will introduce the empirical findings of the study. These findings are organized around three major topics: decision makers' perceptions of decision making in their work, the role of strategic intelligence services in decision making and major development ideas regarding SI's use in corporate decision making.

4.2.1. Perceptions of decision making

This section describes how XYZ's top management perceived decision making in their work at the time of the study. Understanding the way in which decisions are made forms the basis for mapping out the role of SI activities in decision making, which is why it is one of the main topics in this study. Firstly, I will describe the interviewee's perception of the nature of decision making in the case company. Secondly, I will observe decision makers' views on the balance between short and long term decision making. Finally, I will describe the different kinds of decision making processes employed by decision makers in the case company.

Nature of decision making

Decision making in top managers' work was shown to be more about affecting what issues are on the agenda than about making formal decisions. The following quote from one of the top managers interviewed describes the shared nature of top level decision making at XYZ:

> *"way more about influencing than making concrete decisions ... influencing on what kind of issues are brought up, what is prioritized and seen as important both in preparation and also in implementation ... in that sense one does not decide on anything directly ... it is very much like this kind of indirect affecting"*

The manager viewed influencing as a parallel to decision making, seeing it as a way to affect what issues are prioritized. One manager pointed out that in practice, long term decision making is done in executive teams as group decisions. The executive team prepares and accepts the decisions as a group, even though the responsibility for the decision may eventually be assigned to one single person.

> *"Well in practice, in practice it goes so that decisions are made in executive teams. So that the executive team accepts and prepares decisions in a way and then of course it might be so that one individual, the decisisions are signed under a single person's name but in practice most of the decisions are these kinds of group decisions"*

Many found that top level management has a rather analytical viewpoint towards evaluating initiatives, which is why it was considered wise to sell the projects or ideas by building a strong fact base to support them. One manager emphasized the importance of building a business case around the proposition through basing it on relevant facts. He viewed this as an important way to influence the outcome of the decision.

> *"The better I, like, perceive, know ... about the fact base, the better I can sell my own views and in fact ... even though I do not formally make the decisions myself, I have guided the decision making in a certain direction."*

However, there seemed to be a need for a more cross-functional approach to decision making. One manager had observed that intersegment competition had led to a situation where managers in different segments refuse to see the real differences between segments' business environments and cannot put their goals into perspective. In his view, this affected how market growth, for instance, was perceived.

"all of the businesses are some way competing with one another or at least competing against the fact that when the concern … refuses to see the how should I put it real differences in this business environment from which market growth is the simplest example … And our ability, our like mediocre business leader's ability to describe it is really weak … and the reason is often the fact that he or she has generally worked for quite a long time in that environment and cannot put it into proportion with another one." "

Increasing the information flows between segments was regarded as highly valuable. One manager suggested that decision makers from different backgrounds and points of view could debate and analyze issues together in order to leverage the XYZ wide knowledge base. She hoped to have more cross-functional decision making and to have experts analyze the issues together. Utilizing the different backgrounds and points of view was found to be a way to better utilize XYZ's wide know-how base.

"I would hope that we would have more like this cross-functional decision making, debate about things … of course you have to gather the facts first but … the fact that you would actually have experts together making analysis … and from a bit different backgrounds and points of view so that … the XYZ wide know-how could be better utilized"

These findings suggest that top level decision making takes place in groups and instead of making formal decisions individually, decision making is actually more about influencing what issues are on the agenda. In this kind of setting, it was found that the best way to influence the outcomes of the decisions was to build a strong fact base to support one's views. There also seemed to a need to increase cross-segmental cooperation in order to promote a richer view of the business environment and to include more viewpoints in decision making.

Balance between short term and long term decision making

The following quote exemplifies the view that many respondents had regarding the balance between short term and long term decision making:

"I would say that we make too much well-considered decisions … In the sense that issues are grinded in multiple steps and a lot of people want to present their views on the issue and one could rather put a pinch of entrepreneurship. On the other hand it also derives from our will to please the Board, the Board wants carefully prepared and pronounced and governance principles –centered … so that nobody could be criticized that a wrong decision has been made if it is well prepared but if it is improvised then it can be very harshly criticized afterwards"

The decision making processes were seen long and iterative, especially regarding long term decision making. One manager pointed out that instead of putting down fires, decision making at

XYZ sometimes has even too long of a time frame as everybody wants to include their opinion on the matter and every initiative is thoroughly considered. However, this was found to originate from external demands set by the board. The manager noted that decision makers tend to want to analyze things and spend unreasonably long periods for decision making. One manager also viewed the organization as conservative and very risk aversive. He had observed that people want to be absolutely sure about the issues at hand before making a decision.

> "as soon as it is not a straightforward, purely operative question ... then we are often too slow in it, it is not that we would not have time but on the contrary we take too much time for it. So that often, often we are, maybe in that type of questions as a fact too slow and from a subjective viewpoint too conservative. So I say that the fact that we are too slow it is like objective because many trains partially, sometimes I have seen that the train is gone by the time that we are ready. ... and then regarding how conservative we are or how willing we are to take risk then there is no right answer, it is purely a subjective view"

The timeframe for decision making, however, seemed to vary depending on the function. In investor relations, for instance, the timeframe for decision making was seen to be very short. One manager pointed out in that kind of a hectic environment, a decision maker has to have a general view of how the company is doing and of what is happening in the world.

> "in this field of ours ... the timeframe ... is much shorter ... if someone asks us something then we must know XYZ's stance on it immediately ... so in that sense decision making is very fast, it takes place in that moment ... and then on the other hand it requires that there is some kind of a general view of how the company is doing. And on the other hand like what is happening in the world"

One manager pointed out that short term decision making is largely dependent on the business environment. Nonetheless, it was found that short term decisions are still made in a way that supports long term decision making and so that they are in line with long term plans and strategy. Although there are occasionally fires to be put out, decision making was still seen as systematic - the company is still moving towards the directions that are viewed as strategically reasonable.

> "Well short term so, even longer term effects are just like that, it depends a bit on where the world is going ... But the big decision was then that hey, we will adapt to this situation now and react to it."

> "Of course then you have to be able to adapt to make some short term decisions which at the end of the day again should support our long term thinking."

> "it is like both and. That every once in a while we run to put down fires but I would say that we have systematically all the time moved to those directions that we have seen strategically sensible ... I would say that we have it balanced in just the right way."

However, some decision makers felt that short term decision making tended to override long term decisions. One manager found that if there was more time to use in planning the decisions, the quality of decision making would radically improve.

> "there is too little time for A) thinking and this kind of pondering and moving things back and forth, but it is of course also a question of self-discipline. It would help each and every one of us in this company to make better decisions when the use time would be better balanced between putting down fires and long term decision making"

One manager felt that every time you fix one thing, another one appears and there is never a time when everything would be well and under control. As the operations are usually built around large projects, there are always emerging issues that cannot be planned for, but this was acknowledged as a reality of life.

> "we do large-scale projects and it's very difficult to predict … These things they of course appear absolutely and well then, yeah, you cannot always exclude that these things are actually from having impact on your long term decision making … So probably … when it comes to a tradeoff between these type of things … short term operational things usually tend to win over long term … strategic things. Whether that's good, I'm doubtful but that's one of the realities of life."

All in all, organizational decision making was found to be slow and rigid and there seemed to be a need for more entrepreneurship and tolerance for risk. The decision making processes included many steps and required the participation of many people. Due to external pressures, initiatives were often carefully prepared in order to avoid criticism. All of this was found to slow down the decision making process and had led to missing out on opportunities. However, managers seemed to have diverging opinions regarding the balance between short term and long term decision making. On one hand, many pointed out that there is not enough time devoted to long term decision making. In the tradeoff between operational and strategic issues, the operational issues tend to override. However, this was acknowledged as a necessity and on the other hand, it was observer that the short term decisions are made in line with long term strategic guidelines.

Perceptions of decision making processes

Many managers pointed out that their decision making process begins by building an understanding of the bigger picture. One manager found that it was not enough to get a definitive

briefing from someone and felt that decision making requires a broader perspective and a broader scope of information to back it up. He pointed out that he always tries to acquire and maintain a wide range of information and to narrow it down as the decision making process advances.

> *"I always aim to understand like the big picture. And the fact that ok you are supposed to make a decision on something then it is not enough for me to have someone tell me that this is what we are going to do now, no we should be doing this, but I want to understand the whole picture, how it relates to, which means that you have to have a bit of a broader perspective and the need to gather data to back it up is broader ... and then it probably goes like a funnel towards the actual issue"*

One manager asserted that her decision making process starts by creating a framework for good decision making in that particular situation. In her view, the decision making process was more about figuring out the issues that might have an impact on the outcome of the decision and finding out whether there is more data available on them.

> *"I want some kind of a frame and I want some kind of a, I want to find out the criteria, what is the criteria by which I can make some kind of a good decision ... and the process is in a way like figuring out the things that have an impact on it ... if for instance these four are issues that have an impact then is there some data that I can have that relates to them?"*

However, one manager observed that different types of people have different decision making processes. Some people need to conduct an extensive analysis before decision making, but others may start with an intuition up front and then start searching for information to back it up. He found that intuition plays a larger role in short term decision making. He found that the degree of intuition applicable depended on the organization's tolerance for risk. He also pointed out that XYZ should increase its risk tolerance.

> *"all in all, decision making at the end of the day is a question of types of people. In a way that others need a very long analysis to back it up ... for me it is quite often so that I get some kind of intuition very fast and when I follow, listen to some situation or read some stories and .. so that the decision ... is made really quickly but that then the arguments are gathered to back it up and to check that they are really like that the analysis also proves that this is the way things are ... the bigger the decisions that are made then the more versatile the analysis and fact gathering must be to back it up ... So that it is more with intuition it is more related to the organization's tolerance for risk. In the sense that if there is an organization that is willing to accept the fact that errors are made and that sometimes things go wrong and that it it prefers to make decisions quickly and to have things go wrong ... than to reassure, make slower decisions, reassure everything so that nothing goes wrong ... we have to have this kind of risk tolerance ... more, we will only get overridden, our competitors will rule us out."*

Decision making was also found to include an element of judgment, because someone needs to make the decision based on the facts and this requires consideration. One manager pointed out that XYZ does not have any purely intuitive decision makers. In fact, he inferred that decision making is slow namely because the company wants to analyze things in order to minimize risks. However, he observed relying on intuition is not the only way to make decisions quickly. Ideally, decisions could be made more while relying on facts when there would be, for instance, an 80 % level of understanding regarding the issue and the remaining 20 % can be left for consideration, seeing that the big picture would not change no matter what comes up. However, he found that this approach is not employed well at XYZ.

> *"there is an element called judgment. So that in my view management is primarily fact based ... but there is always an element of judgment in the sense that somebody has to make the decision based on the facts, which is based on consideration. Do we have purely intuitive decision makers? Well not at least anywhere that is a long term issue ... we are slow and overly conservative so that it usually derives more from the fact that there is a tendency to want to over-analyze things ... but the alternative for quicker decision making is not to have pure intuition but to have an understanding of the most important facts so that we are ready at an 80 % level of understanding to make a decision. So that there is the judgment that in a way seeing the big picture, that the answer will not change even though the last 20 % were digged out ... So that in my ideal world, decision making is fact-based, fast, but it always includes an element of judgment and we as an organization, on average, are not very good at it."*

The decision making processes seemed to begin with building an understanding of the big picture, which was created through gathering information from a broad range of sources and figuring out the drivers that affect the outcome of the decision. The relationship between facts and intuition as the basis for decision making seemed to depend on different personal preferences. Although many of the respondents felt that intuition can play a role in decision making, it was generally considered that the bigger the decision is, the more it needs to be based on facts. However, one manager pointed out that intuition is not the only way to make decision making more fast - fact-based decision making could also be made quicker by making the decisions based on general level certainty and including an element of judgment. Using judgment would enable the decision maker to make the decision when he has gathered a sufficient amount of information about the big picture.

4.2.2.   The role of strategic intelligence activities in decision making

All of the managers seemed to agree that the SI function is somewhat useful and that there is also a need for its services in the future. However, the role and use of SI in decision making showed significant variance between different interviewees. In this chapter, I will first describe decision makers' approaches to the function. Then, I will review the ways in which SI services are used. Finally, I will conclude by introducing managers' perceptions of the role of SI in their decision making.

Decision makers' approach to SI

The following quote describes one of the more positive approaches to SI:

> *"Strategically it is one of the most important things. Because it is not, it is in this game of the world and seeing that the world is as it is, then monitoring the competitive env.. or like monitoring the environment it is a key, key competence."*

This manager found SI to be one key area of importance in strategy work. He inferred that it is essential to know one's competitive environment and to monitor it. Generally, SI was viewed as a tool that supports top level managers in their work.

The interviewed managers appeared to assume either a proactive or more of a passive approach to the utilization of SI. One manager mentioned that he had been proactive and met with his segment's SI analyst to explain his information needs. He felt that it would be important for SI to have similar discussions with each business unit. He seemed to be happy with the service that had been provided to him because SI had adjusted its offering based on his needs. This was compatible with the observations I had made as well. Amongst the managers interviewed, there were a couple who had more frequent contact with the SI function and the SI function had been modifying its services according to their needs. I had also observed that this was beneficial for SI employees as well since through discussing with these managers they were able to build a better understanding of the phenomenon in question and of what the information was used for.

> *"what is, what is first of all the most important information, this is why I sit with Klaus last year and said look, for SBL what is important, ... and that is important that you talk with each business unit and say what is important for you. I did it, I took this proactive decision and I went to the fifth floor and said guys, you are working on, you are sending a lot of information, some of them does not make any, you know, difference for me. What I need for SBL is this kind of information, and they did quite well, they are doing, so, I am fine,*

from SBL perspective, because everything I have asked BI to do they have done and they kept, they have been keeping this updated."

Another manager also mentioned to have close ties with the SI function. He pointed out that his cooperation was at a phone call level and knew that if he needed something, he could ask for it immediately. However, he viewed himself as a more frequent user and doubted whether the relationship between SI and decision makers would be the same for people who do not need information as frequently as he does in his work.

" I'm a constant user of business intelligence so it's more like on on phone call level and if I need something I know the guys to talk to so it's not like really waiting for, let's say something flashes (yeah) on the screen or that might be yeah well yes that's part of my job so that I'm a more frequent user so it might be different for other people to whom it is important to be updated in regular intervals and who more wait for for the ready information like the reports."

One manager seemed to consider that SI should assume a more service-centered attitude. He noted that the headquarters is not the right place for SI and that the function should be more proactive towards its end users. He pointed out that SI should approach its customers to ask how the function could serve them better. He emphasized that the function should be proactive in figuring out the customers' needs and making the initiative instead of waiting for the customers to come to them.

"You are doing services. Services, and what you are doing here in spite of sitting in the fifth floor – that is not the right place for you ... services are all about proactive attitude. Customers don't come to us and say, no, you have to visit the customer and say how can I, how can I help you? How can I improve you're your results, how can I build, which kinds of things, what do you you need from me to improve your performance. And this is proactive attitude. And it must come from you."

Managers all viewed that SI is important and useful. At best it was seen as a crucial aid in strategy work. However, different decision makers' approach to function seemed to vary and there seemed to be both proactive and passive users of SI services. The more proactive managers often visited or contacted SI personnel personally in order to explain their information needs. They had close contact with the function and could name the people who worked with these issues in the SI function. The more proactive users seemed very satisfied with the function's services and knew that if the need arises, they can contact SI directly and get the things they need on a quick schedule. In my observations, I had also noted that when a manager contacted the SI function with a specific request, they were rapidly acted upon and that the SI function was happy

to help in these requests. However, some of the managers pointed out that not all decision makers have a similar relationship with SI and its personnel. For this reason, it was pointed out that SI should be more proactive - instead of waiting for customers to come visit the function and explain their needs, SI should take the initiative and approach its customers.

Utilization of SI

The utilization of SI seemed to focus around five different support activities: firstly, SI provided decision makers a framework for decision making – it helped to create a bigger picture of the business environment against which managers could screen signals. Secondly, information from SI was used to supplement company internal information. Thirdly, information from SI helped managers to better evaluate the level of ambition in goal setting. Fourthly, SI served as a lagging indicator by providing a tool that helps to monitor the projects that XYZ did not take part in. Finally, SI was also found to be a helpful tool in communication with various stakeholders both internally and externally.

Framework for decision making

SI was seen to provide an essential help in building the background for decision making and an understanding of what is happening in the markets. Through participant observation, I also found that regular information gathering activities in SI were mainly focused around gathering general level macroeconomic and company specific data. One manager pointed out that SI assists to build a sort of a framework of the state of the environment that is utilized when making decisions and in thinking in general. He inferred that once you have built a good general picture of what is going on in the markets; it is easier to spot emerging issues that might have an impact on the business and to put decisions into perspective. For instance, he mentioned that when deciding on a deal that includes risk or a bad profit margin, it makes a big difference whether the market in question is emerging or declining. He found that building this kind of a framework from scratch every time would be too time consuming, which is why it was found very important to receive this kind information from SI regularly.

> *"since there is normally too little time then for me, as an example, it is an essential background, background for like the decision making ... and actually the idea behind building a background is to create a sort of a grid which lets certain things through and catches the other ones ... so it is like some kind of a mental*

network ... so it is kind of like a framework through which people think and make decisions and the better it is, the better. So like a good example in my view is when from time to time we get deals, or we would want to take then you have to always understand that if we are taking it with a risk or a bad profit then it is one thing to take that kind of a deal in a market that is clearly growing and continues than it is when it is the only deal in that country for the next fifty years ... and you get into trouble with it ... If the background, if you have to do it separately every time then it is too slow, which is why it is like very important to get information continuously"

Decision makers at XYZ also found it important to benchmark the company's performance against competitors. One manager mentioned that seeing how others are doing things, figuring out the best way to operate and starting to work towards that was one way of working at the company.

"all in all we are the kind of, I think we are the kind of a house where we like to look at what the others are doing and it is part of our effort to try and look at what others are doing and try to define the best way of working on a global scale, Finland-scale ... and then start working towards that"

The information from SI was used as a mental framework that describes the state of the market and competitors' performance. Thus, it can be said that the intelligence activities were more at the competitive intelligence level. Information from SI affected decision making in the background, helping to provide a picture to which signals from the environment were compared to. It was found valuable that market- and competitor information was fed from SI on a continuous basis.

Complementing company internal information

A few managers mentioned that information from SI is used in decision making to supplement company internal information. One manager pointed out that he usually has to make suggestions on how the market should be developed and to give guidance. He inferred that this requires constantly monitoring the business and its development and he tried to understand the underlying trend. He pointed out that the source for this kind of information is the company internal management system but also he also backed those reports with information from SI concerning, for instance, price trends.

"I have to make like kind of like a recommendation of what we tell them regarding the development of the market and if we think that we're giving like guidance ... as an example the project business of ... machines ... for instance, this is like then I monitor it constantly and see how it develops... and I try to understand the trend and then if I think of what my source here is then it is of course ... it is our internal management system but in addition to that, for instance in this report, I also do a backup so that I see, and these are all

coming directly from BI, so that all of these price curves and quotes and others come from there so I monitor these continuously"

This kind of a use of SI suggests that the information is found valuable in itself, but also that it is even more useful when utilized aside the company's internal information. Information regarding the external business environment was used as a backup for argumentation regarding the company's performance and this kind of information was monitored on a continuous basis. However, through participant observation, I had noted that SI activities currently focus only on external information and do not leverage company internal information to a great extent.

Goal setting

One manager pointed out that SI was used in decision making when defining targets, countries to expand to, which technologies to invest in and so forth. He seemed to take the utilization of SI as a given and implied that the information from SI helps decision makers to get better facts or at least to improve their assumptions on issues.

> *"Yeah well absolutely, absolutely ... now when we define targets, countries we would like to go to, do we invest into new technologies and and whatever is out there. Of course we ask those people to to get better facts ... or at least sound assumptions."*

SI seemed to also help in defining the right level of ambition in goal setting. One manager pointed out that when setting goals, the target needs to be ambitious enough for the organization to find them motivating, but they also need to be achievable. In this sense, the manager seemed to utilize SI as a management tool. He stated that it helps him find arguments to challenge the company's businesses on, for instance, whether their growth rate is sufficient, whether their cost structure is right and whether their profitability is correct.

> *"all of the information that management receives through different channels affects decision making and goal setting ... and all of this is like influencing the goal setting and goal setting discussions that we have with the businesses. ... that is where I get like arguments to challenge like our own businesses that whether their growth rate is sufficient, whether they have the right cost structure, whether they have the right profitability ... It is a central part because management should be able to set goals so that let's say that the organization finds them motivating and achievable, but also at the same time ensure that the bar is high enough, but the fact that if goal setting is constantly at an unrealistic level then it kind of takes out the organization's motivation for working towards those goals"*

However, SI was not found to have a big role in helping to identify opportunities and best options to pursue. One manager pointed out that this kind of information is usually gotten from

consultants and customers directly. Furthermore, seeing that SI mainly collects public information, he inferred that by the time that these signals appear in the press it is usually too late to act upon them.

> *"if something is discovered there by let's say the general screening, yeah then of course we have to be able to react on that. But ... we usually get information through consultants or customers directly as they want us to be involved or sometimes when you read it in the press about a project somewhere it's usually too late"*

Information from SI was used to guide goal setting. The service provided facts that enabled managers to make sounder assumptions about the environment and its development. This way, the service also helped to set a right level of ambition in goal setting. Knowledge about the market helped to set targets that were ambitious enough to be motivating, but still obtainable. However, the information from SI was not found adequate by itself to spot the opportunities pursued. That information was seen to come more from consultants and customers directly.

Lagging indicator

Some managers stated to use the news service as a lagging indicator. One manager mentioned that the portal communicates interesting news concerning leads and projects that XYZ has not been involved in - projects that the company has missed or ignored completely. He had observed that these leads serve as a basis of discussion. In his view, it was useful to monitor these cases in order to know what is going on without the company's involvement and use it as a source of feedback for sales people in order to improve the bidding process.

> *"there are I think almost weekly leads and projects and happenings on the market which the organization have missed ... So, it has brought a number of interesting leads to discuss at least ... so it's good for the sales people to get that feedback to for and to improve the bid no bid decision process ... So also things which has happened without us is important, you know. And it happens, quite frequently."*

The information that SI provided was not only used to monitor competitors and the market. Some managers also used the information flow to keep an eye on the projects that XYZ was not taking part in. In this sense, SI provided a lagging indicator that helped to track, for example, projects that had been missed completely. This information was then used as feedback for the sales function in order to improve the bidding process.

Communication tool

SI was not only a tool that supported decision making, many found it to be a strong footing for communication as well, both inside the company and with external stakeholders. One manager pointed out that a large part of managers' work relates to discussing with stakeholders and investors concerning both short and long term issues and in this task, it is essential to have up to date knowledge regarding, for instance, the competitive environment. He stated to need constant input on what competitors are announcing, what certain actors are saying about the market environment and how customers are viewing the development of their end markets.

> *"a very large part of my work, even though it is not actual decision making, relates to discussing with investors and there you discuss with investors about both short term issues and long term issues. And there it is extremely important for me in that task to have as up to date knowledge as possible regarding both short and long term issues ... for instance relating to the competitive environment or the competitive field it is important that I basically get constant input regarding the things that competitors announce or what certain research organizations are saying about market development or what our customers are saying about the development of their own end markets. So it is not only, the information is not only used for decision making but the information is also used in communicating to our stakeholders ... The information is not only forming the basis for let's say short term and long term decision making, it pretty strongly forms the basis in all kind of communication, whether it is internal communication or external"*

Some managers stated to use SI services for communicative purposes as well. It was noted that a big part of top managers' work relates to having discussions with various stakeholders, both internally and externally. For this reason, it was found to be very important to have an up to date picture of the business and competitive environment. SI was seen to support in building this picture and it provided help in explaining the rationale for specific business decisions, for instance.

The current role of SI in decision making

It was pointed out that SI should not provide guidelines on how to act on the basis of the information because this was considered to be the businesses responsibility. If SI was to provide strict guidelines as well, it would also mean that the function should take responsibility for the actions taken based on those suggestions and this was considered to be the kind of responsibility that belongs to the business. SI's scope was seen to comprehend strategic level issues and competitor and market level detailed information was seen as the business level's responsibility.

"it is like this strategic, upper level, higher level, like where the world is heading and so forth, it belongs, it is like the concern's responsibility this kind of competitor or market intelligence ... and then again if we go to the level like ok ... what do the competitors do in that product portfolio then it is not ... our business ... that is something that the sales people and others have to follow ... where do we draw the line that whose job it is to make business decisions ... of course you can draw guidelines here and draw conclusions like this thing's implication for XYZ is this ... but I don't think that it is our [SI's] job to do that ... BI's job is to produce information to support corporate decision making and those decisions are made wherever those decisions are wanted to be made ... it becomes a question of who takes the responsibility. Where is the responsibility for those decisions, then it would mean that the business responsibility would also move more towards BI"

One manager emphasized that it is not SI's role to support daily decision making and that those resources should be located at the business level. He seemed to be satisfied with the way SI was organized at the moment and stated that it should focus in providing to strategic level information and the daily decision making should be left to the businesses. In his view, the more detailed information and analysis should be done in cooperation with the business level. This is in line with my participant observations as well. SI analysts aimed to present a picture of the business environment without taking a stand on how managers should react based on that information. The information produced by SI aimed primarily to ensure that all managers have the same view of the business environment and thereby facilitate decision making.

" I think for daily decision making the resources should be in the business and corporate should help us with the medium to long term decision making ... I feel the way it's right now that corporate supports us with macro views, sometimes of course based on the information we gave they are following certain competitors, which is exactly what they should do but from them we we shouldn't ask detailed reports or detailed analysis. Those we should be responsible for in cooperation with them so yeah, we could use more of that but we should be ourselves responsible to that to my understanding."

It seemed that what people end up doing with the information provided by SI depended on the organizational level that they are in. One manager pointed out that front line people have a very different time span in their work and that they are more concerned with short term issues. He pointed out that these people can benefit from the information in an educational manner and it can increase their awareness or knowledge, but when it comes to making changes in actions that are based on that information, the initiative must come from the top level.

"these guys you know, they're gonna read and say ok this is ten years ahead, I need to survive tomorrow. But that's nothing wrong, it's their role, they are the guys in the front line and they have to score goals every day ... and this material is mainly for let's say strategy and also open our minds for all XYZ employees ... But they don't know what to do with this information. ... It must come from strategy point viewpoint, head offices, from business lines to make to to decide for investments, long terms etc. etc. these

guys, and and and sometimes I read some information and say "what can I do with that?" nothing, just it
helps me, my business knowledge and the world where we're gonna be in ten year time. But, what can I do
to change that? No, I can't because I'm not the CEO, I'm not the, it depends on which level you are."

There appeared to be differences in how interviewees viewed the usefulness of SI in decision making. One interviewee acknowledged that she could utilize SI more in her work, but pointed out that there is not enough time. She mentioned that in order to save time and effort, she prefers to use other sources of information regarding ad hoc issues. However, she did find macro level publications and the news articles in the Plaza platform useful in keeping up a general sense of the market.

> *"I would say that I could utilize it more but then there is the question of time ... usually I get it more easily*
> *when I say that send it to me in an e-mail, and not that I go to our BI and ask for them to dig it out for me ...*
> *I have experienced that when there are these monthly macro reviews ... they are useful in getting a general*
> *picture ... and maybe like just when there are some industry reports ... in order to keep some kind of a good*
> *touch in what people are talking about at the moment. Or I look at the latest news of our peers ... or what*
> *they have said about the future, that is maybe the way I use BI" (Interview 14)*

One of the benefits of utilizing SI was also seen to be the time savings that it enabled. One manager mentioned that the function makes his life easier through saving him time in collecting information. However, he noted that the current offering – the public information communicated through the Plaza – is by nature too late.

> *"BI ... makes our life easier. I could get some of this information but would instead of, you know, instead of*
> *20 % of my time I would stand 50 % in front of, you know, trying to collect all this kind of things it makes*
> *our life much easier. And, uh, of course I ... use, for instance, this ... how do you say, intelligence we receive*
> *every day ... I read every day and, you know. But, I can't, uh, when [a competitor] announced that they got*
> *an order of 10 million euros blah blah blah, too late."*

One manager doubted whether the information produced in SI is effective. He felt that there is a lot of data available from SI, but doubted whether it actually affects the way decisions are made. He implied that decision makers may not even acknowledge all of the information available and that there is a risk that SI keeps feeding decision makers information, but not all of it is influential and affects the way XYZ is managed and whether decision making is based on intuition or facts.

> *"Well there is a lot of information coming ... but then there is the so what – that how does it affect the way*
> *decisions are really made ... there is a risk there that the information just keeps on coming and it does not*
> *affect ... how, like, things are managed and what decisions are made ... so there is definitely enough*

material ... there is then just the question that what ... in the material and information ... is influential and significant and ... how big of a part of decisions are solved with intuition"

One manager summarized that SI has two main roles in decision making at XYZ: firstly, it acts as a benchmark - it provides information that helps to challenge businesses' goal setting. Secondly, it provides forward-leaning information.

"if you think about the whole top management's operating environment then our internal reporting is too limited because it is viewing in the rear mirror. And it is mainly looking at our own performance and does not like benchmark it to anything really. And through Business Intelligence it is possible for us to get information that is forward-looking and on the other hand it is possible for us to receive benchmark information to which we can benchmark the performance of our own businesses ... Benchmark information from like B-companies, and benchmark-information from like customers ... so this is how you could summarize like the value of BI"

He pointed out that XYZ's internal reporting is too heavily based on history and the information that it produces is too limited to describe the whole operating environment of top level management. In his view, SI helped decision makers through providing more forward looking information and, on the other hand, also provided benchmarking information that helped compare the company's performance. In his view, these two functions formed the added value of the service.

One manager found that if there was no SI services, managers would make decisions based on their own knowledge. She also seemed wary that manager's own knowledge might be outdated and had a doubtful approach to whether smart decisions could be made based on it. She pointed out that managers should do more background research before making the decision.

"if they are not there then after that I think that managers would decrease the use of smart information to support decision making. There is an awful rush and then you make it [the decision] based on your own knowledge which might be many years old, or assumptions or ... and somehow I think we should think more about investigating things more before we act upon them"

Managers viewed SI as a provider of strategic level guidance. Some of the interviewees emphasized that SI should only produce information and not draw guidelines on how to act based on that information. It was not seen as SI's role to provide strict suggestions, seeing that then the function should also take responsibility for these guidelines. The function was seen to have two principle functions: firstly, it provided information that helped to benchmark XYZ's operations. Secondly, SI produced forward leaning information that supports the company internal

information. One manager pointed out that without SI services, decision makers would rely more on their gut feeling in decision making, which might lead to erroneous decisions. However, the opinions regarding SI's usefulness seemed to vary. Although the function was found to be helpful in saving time and effort in information collection, some interviewees pointed out that they could utilize the services more. There were also doubts regarding the effectiveness of the information provided.

4.2.3. Major development ideas

The managers interviewed were very proactive in making improvement suggestions regarding SI services. Many found that the function could assist them more in decision making and were eager to explain about their information needs. Below, I will firstly introduce development ideas that relate to the organization of intelligence activities. Then, I will observe management's suggestions relating to the improvement of information analysis and finally, I will introduce some suggestions regarding the future role of SI in decision making.

The organization of SI activities

Some decision makers seemed satisfied with the current structure of SI and felt that it is good to have both centralized activities and segment specific analysts located in the business:

> *"this structure that we have like ... centralized these resources ... there are like clear synergies regarding processes and procedures for example ... that is like good and another important dimension is that you have there kind of like extensions located as close to the, physically close to the businesses so that you have ... at least one channel that understands the same language as you do ... And then again those guys who are here close to us then simultaneously have a closer look at this business"*

The centralized SI function was found to create synergies in the collection of information while the extensions located close to the businesses enabled the network to know about the business as well. This way SI as a collective team can form a better picture of what is needed. However, some found that the cooperation within the SI network does not currently work well, in fact, one manager viewed that there is no SI network at the moment and that the operations are dispersed. There is also a need to standardize and harmonize the reporting. He found that different segments report in different ways and in formats, which makes it difficult to consolidate information at the decision makers' level.

"you should find like a clearly stronger way to cooperate ... Now you do not have it, a network ... This work in silos ... they should like, they should form networks ... we should strive to harmonize this BI process at XYZ, in a way like those tools and the reports and the way of working"

The centralized approach to SI was seen to challenge the leveraging of internal information. Many suggested that SI should transform to more of a network structure where different key actors in the businesses were responsible for reporting relevant data in their field and SI would support this by providing data from public sources. Issue ownership could be in SI as well, provided that the analyst possessed experience from the business. However, one manager emphasized that the issue ownership should not be based solely on who has access to databases.

"I think we should have this kind of a ... network organization where there are, in some places, people who are professionals ... someone who is responsible for some specific customer or market area and they would simultaneously have the role like hey, I need to know these issues as well ... and it is expected of me to report it twice a year"

"so that we get the like full benefit of it then we have to attach it or like do it as a joint venture, like I said, with the business ... of course the issue ownership would have to be in the business organization but then again business intelligence is most likely the machine that that would have to, in a way, be efficient to get the things that are found like in the public domain that relate to it ... And why couldn't the owner be in business intelligence as well, especially if ... we have rotated people there from the businesses ... but ... the ownership should not be purely based on the ownership of the database"

Managers seemed to think that the people who produce information in SI do not possess knowledge of the business, but the idea of having SI cooperate with businesses received support. One manager pointed out that she would be happy to help SI to connect with key people the business. However, it was noted that it could be challenging for SI to find logical partners from the businesses since the suitable strategy personnel have lately been downsized.

"we just don't like think about it that the people who produce the information they do not have the knowledge of the business. In my opinion, I will be happy to point out the people in our organization who could give information as long as you know what business, what types of things it relates to then you can always find the time"

"you should be able to turn to someone and this person on the business side would like organize the meeting ... I would like form a group ... around BI ... a sort of a reference group ... during this time of poverty we have pretty much reduced the people who have done strategy work and it has ... gotten smaller the group of people who could like naturally discuss"

Managers wanted to have more conclusions drawn from the data but this was seen to require knowledge of the business. Business knowledge was seen to be important in, for instance,

screening weak signals in the environment. It was argued that analysis should be at least partially done by somebody who understands the business. Furthermore, it seemed that managers did not find SI to possess this kind of knowledge. One manager pointed out that requiring analysis from the businesses' point of view might be too much to expect from SI. However, another manager pointed out that SI could gain business knowledge through having, for instance, one senior analyst in charge of every business segment.

> "business intelligence must somehow be organized that the last step before it comes to my attention or to a decision must be somebody who understands the business … there is no intelligence in the figures, in the material until somebody has drawn some sort of conclusions out of it. And that takes time, and it takes experience, it takes knowledge about the business so it might be even too much to expect … you don't have to be hands on in the business to do that but but a more deeper knowledge than just information gathering."

> "it is a question of resources ... then you would have to have people there who have a lot of experience … who have like a versatile view … also like the view from the business side … so that we could bravely make conclusions … if, let's say you have like one of these senior analysts per business"

> "The BI team as it is can perceive 60% of these kinds of signals but in a way the remaining 40% most likely requires you to be on the business side, to like sense the mood there and then we are again at the grey area where the operating model could be developed"

Organizing SI as a network received support among the interviewees, but it seemed that the current network structure was not utilized to its fullest capabilities: some managers pointed out that the information flows in the current network do not work, while others did not even know that such a network existed. The operations were seen to be dispersed and different actors worked in different ways. One manager emphasized that the ways of working and reporting within the SI network need to be harmonized. Moreover, managers viewed that screening signals and analyzing information requires knowledge about the business knowledge. SI was not found to possess this kind of knowledge. It was suggested that SI should get closer to the business level by either cooperating with business people or by rotating people from the businesses to the SI function. Thus, the network structure seemed to be suitable in theory, but in practice, there was room for improvement regarding cooperation and the flow of information within the network.

Improving analysis

In this section, I will introduce the main development ideas regarding the improvement of analysis in SI. I summarized the management's comments around four key topics. Firstly, I will

review the mapping of top management's information needs. Secondly, suggestions about expanding the scope of information gathering are reviewed. Thirdly, the analysis needs are reviewed in more detail and finally, I will observe suggestions regarding the use of scenario work in analysis.

Finding out top management's information needs

Managers were not too satisfied with the screening of the news. Some of people who answered the SI survey in 2010 also felt that the news service provided irrelevant data. One manager interviewed pointed out that the news screeners seemed to be unaware of the businesses that XYZ is in and that apparently they receive no feedback in order for them to develop. Consequently, many managers pointed out that they were suffering from a flood of news articles and rarely had time to go through all of the information that was fed to them.

> *"these people who collect the news they do not know which business we're in, and they don't have the touch and it they will not develop one because apparently they do not receive feedback, and then I get frustrated when ... there's those long lines ... and most of the time I don't even have the time to go through them ... And I'm not the only one, I bet there's a lot of us who do the same."*

> *"too much irrelevant information is provided. Filter tool does not allows specific searches." (SI Survey 2010)*

It was pointed out that SI should have more discussions with top management in order to find out what kind of information management expects to get from SI. This would enable SI to improve screening of news and signals. Many interviewees also pointed out an interest towards having these kind of signals fed to top management directly. One manager noted that SI should not assume that top management has resources to go through the vast quantity of data that it currently feeds in the databases.

> *"If BI could like develop its actions in the direction that it would have ... like a clear understanding based on discussions with the management on what kind of things are weak signals. And then when BI is going through the things, going through the data and it spots these weak signals, based on the discussion with the management, it could then also feed them to top management .. so that the management would be fed the kind of information that is estimated to be the most relevant data based on the discussion with the management, I believe that the management would find that very valuable"*

Managers seemed to think that currently, the news screeners SI uses do not possess knowledge of XYZ's businesses. This was found to have led to an overload of news signals and managers pointed out that they do not have the resources to go through the vast amount of data that SI

communicates to them. There seemed to be a need for a more targeted SI service that could be fed to top managers directly.

Expanding the scope of information gathering

One manager pointed out that he had heard criticism concerning the depth of SI. He pointed out that business level decision makers need the kind of in-depth information on issues that is not available from public sources and must be created within the organization. However, he acknowledged that it is challenging for SI to collect this kind of internal information because it is dispersed around the organization.

> *"on the business side then from time to time you hear criticism towards BI and usually it relates to some like very detailed issue ... that you couldn't get from any public source, you have to form that opinion here within the organization and ... there you inevitably form an interface where you move from the field of centralized BI towards the business side and ... how to in a way get the relevant information that is largely created in the business to BI ... there is no easy answer because that information is like born in pieces here and there ... And then again when these industries are so different then you inevitably develop specialized knowledge that lies in the businesses that is not like common knowledge"*

One manager observed that corporate SI in its current form should only be concerned with macro level issues. He claimed that any analysis that goes more into detail regarding the business cannot be done successfully because the SI function is isolated at the corporate level and does not discuss with others. This opinion also supports the view that proper analysis requires possessing knowledge about the business or at least communicating with people who do. Furthermore, this suggests that analysis requires having more versatile information than the one available from the public domain alone.

> *"the lower we go from the macro level and the more it is done in [Group Strategy department] and distributed without discussing it with anyone then the bigger risk it is to not get it right"*

It was also suggested that SI's scope could also include internal data on what is happening in the company, how its businesses are developing and who is responsible for what. There seemed to be a need for a mechanism or structure that would help gather company internal tacit information. Some managers pointed out that SI could provide such solutions.

> *"BI could help there ... to dig information from our businesses that is not perhaps clearly market data but in a way relates to managing the business, management-related data, and developing models of cooperation"*

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"so that we could get from our own field ... more like information flow from our own sales people, to get the kind of tacit knowledge that is currently left somewhere in the organization ... to the use of everybody"

Arranging common workshops could also be a way to gather and compile tacit information. One manager pointed out that it would be better if SI could help structure such events. There appeared to be interest towards having more people take part in the analysis of information. One manager pointed out that from time to time, SI could host events around a topic and then a broad scope of people from the organization would take part in analyzing it.

"we have a lot of tacit information ... And to bring all these things really up to the surface and then again to compile them, that should be done in a workshop ... and probably if that can be done properly structured from corporate, having various businesses involved and that would definitely give a much better result than if we do home cooking here."

"so that it would not be only like BI, but it would have broader scope of people doing it ... it could be fairly interesting. And I'm not saying that it should happen on a weekly basis or continuously, or that everyone should be doing BI but that it could be some, just as a wild suggestion, a theme that would be further analyzed ... some external signal, theme, change, decision ... markets, topic that you would then begin to analyze."

Another way to collect tacit information would be to set up a rumor mill. One manager pointed out that there could be an actor at the corporate level to whom people could convey rumors and who would then direct those kinds of signals to places where they can be utilized. In his view, rumors could be used to analyze patterns and guide the analysis of information in SI.

"perhaps there should be a rumor mill there (yeah), because there are a lot of rumors, a lot of information which people get informed ... and that is of course it's difficult to use that but if you could have somebody taking care of the rumors ... To get some guidance on how to ... evaluate the official ones ... and well sometimes it's very valuable ... The big disadvantage ... is that ... you have no quality assurance ... but still it's helpful. And if you had a person who has let's say the task to know everything about Andritz ... then you would know who to turn to ... so there's somebody who can gather that and see if there is a pattern ... But I would not give it out the way they would give out information in the Plaza ... those analysis should be restricted to certain levels in the company. ... you have to have a certain understanding how to use information."

One manager pointed out that combining tacit knowledge with fact knowledge would form knowledge that is unique for XYZ that nobody can copy. He also found it useful to interact with different stakeholders both inside and outside the company.

"tacit information combined with facts forms information that is unique to us ... this is greatly improved by interacting with different stakeholders. Also within the company, not just with the providers of fact information. And it is, it is useful because it forms the kind of knowledge package that nobody can copy"

One manager suggested that SI should attend seminars and events where it could form personal contacts and interact with various actors in the market. In this way, it would be possible for SI to gather unique information that is not publicly available and differentiate from the competitors' SI.

> *"we have business informations in the internet or in the reports, our competitors (knows) have it the same time …in this kind of seminars you talk to people … and you pick up some.. and not what the analyst pick up and put in the press, but what is your feeling uh, and sometimes I meet the CEO of some big corporation for one hour, two hours meeting. I got much more important informations because it is just between me and he or she … or at least you get this information in advance. … This makes differentiation."*

The managers interviewed seemed to have information needs that extend beyond the scope of data from public sources, including tacit and non-public industry information as well. The analysis of information was also seen to require more in-depth knowledge about the business. It seemed that as such, corporate SI cannot analyze information at the business level in a value-adding way. As a solution, some managers pointed out that analysis could be performed in groups so that SI could host workshops on topical issues where various people from the organization could analyze together. Managers also emphasized the importance of leveraging company internal information. On one hand, the before mentioned workshops were found to be an arena for sharing tacit information. On the other hand, it was also suggested that SI could create and offer a tool that would help managers gather company internal information. A few managers pointed out that SI could set up a rumor mill to gather weak signals. Managers seemed to value the combination of information from different sources and viewed that it helped to create information that is unique for XYZ.

Increasing analysis

SI should move from gathering raw data more towards analysis and providing intelligence. One manager pointed out that the function should focus more on drawing conclusions from the data and forming a company opinion on it that it then makes available to management. Analysis should combine experience, new information and intuition in order to challenges peoples' views and encourage critical dialogue.

> *" we are very good at providing raw data. … and … the point where we should put more resources to work … to help us to come to conclusions which we then also can store in a proper place, update, make available to management, so to say to form a call it company opinion."*

"all kind of preprocessing that you can make for that big amount of information ... and some kind of formalization, turning the relevant parts into indicators, I would find it useful"

"So this experience and and new knowledge and like intuition ... the information needs to be fed and it has to be analyzed, we must present views and at the same time challenge, question whether the conclusions are right, whether the basics are correct and create this kind of critical dialogue and evaluation regarding important issues"

There appeared to be a lack of XYZ level analysis on emerging issues or their potential impacts and every business was taking care of their own needs alone. SI should focus more on analyzing what the signals mean for XYZ in order to pick up patterns and put the dispersed signals together.

"for instance China's five year plan ... means something different for each of our businesses ... I asked my colleagues whether anyone ... had like analyzed what it means on the XYZ level ... so I got like for instance Mr X had done something in relation to the ... business in China. But that there would have been something wider than just one businesses point of view ... that we don't have ... this kind of an ability and resources to analyze ... signals and ... themes, what they mean and also ... to be realistic as to what is the most likely impact ... you have to have some kind of a ... reality base ... based on our environment, our business plans"

"a strong signal is [a competitor company] gives out a press release that they have acquired a small company in Slovakia. Good. That's.. but why? Who who spends a couple of thoughts why did they do that? How does that fit in to their their current structure? How does that fit into the signal that they sold another company in in South Africa? I mean that kind of weak signals which is which are patterns, I don't think is picked up (yeah)."

Although managers hoped for more tailored services, it was acknowledged that it would be impossible for SI to tailor its services for all of the customers. However, it was suggested that the degree of specialized services available could depend on the position held by the customer and that SI make more targeted summaries for top level managers.

"it probably depends on the position because ... from BI's point of view it gets ... impossible of everyone ... demands to be served as an individual. It would be an unreasonable demand. So depending on the position"

"the amount of information coming from BI that a business line president has to read it is more… that you can manage, but when we should ... read about the development of the customer base in like all of the eight business lines ... then ... here at the upper level ... we tend to kind of suffocate with the amount of information ... and [the Strategy Director] sends then ... selected information ... which is like good because ... that I read"

"you get some amount of external reports that are selected that they could be interesting and that is good because in a way it does not come naturally for me to search for those kind of things actively by myself. I never find time for that ... I am not very good at finding time for any proactive information gathering that deviates from the channels that I regularly use"

It was also argued that SI could provide more early warnings and emphasize critical signals because currently the flow of information is so big that it conceals weak signals. When analysts spot a peculiar phenomenon they should not feed it in the process normally but highlight it to signal that it is a must-read.

> "if ... the people who make the reports ... spot a phenomenon that they find confusing then they should not feed it in the mill ... they should ... prioritize that hey, this is the kind of thing that everyone in XYZ's management should read ... so that this kind of a role of waking up ... influencing"

One manager pointed out that SI should create forward-leaning, benchmarking indicators in the reports so that it would be possible to know beforehand whether there are fires emerging somewhere in the organization if corrective action is not taken.

> "more of these like forward leaning indicators that would ... tell us ... whether we possibly have fires emerging somewhere unless we take action ... for instance that ... our market share is declining and we should react ... these are the kind of things that describe ... the development of our businesses' health ... in the long term. Now ... we compare our performance with our competitors' performance on a quarterly basis and then we try to draw trends out of it. But if ... we would have similar things concerning the development of market shares ... then they could in a way benchmark the way we are developing in relation to our competitors or the general market development ... these would be very important things for management ... these like ... drivers for our products' demand and our service production's demand. That kind of things ... I have not systematically gotten this far but without a doubt it would have been valuable information ... then I can also challenge for example let's say our ... business" (Interviewee 6)

Generally, a lot of managers seemed to think that SI should assume a bigger role in decision making. Many managers pointed out that they wanted SI to draw conclusions on the data provided and the services should be more tailored at the top management level. It was found that SI should expand its operations beyond data gathering and put more emphasis on the analysis of information - evaluating its consequences and implications for XYZ. SI could draw company-wide opinions on emerging issues. The function should also strengthen its role as a provider of early warnings and alarm people to issues and signals that need to be taken into account.

Creating scenarios

Regarding scenario analysis, there appeared skepticism as to whether SI would be the perfect actor to make scenarios and whether they would be a suitable method of analysis in the first place. Some found it more valuable if SI would just map out the underlying drivers that affect the way the future develops and review their causality and timeframe.

"scenario working is ok, but I'm a bit skeptical, I would more look for the things that really affect ... having BI make scenarios, I don't think, I don't think that is would be a good tool"

"you need to have smarter, smarter indicators ... so that you can put things into perspective and try and understand what it, why you have those graphs, what do they mean and in what kind of a time span do they influence. So that these causal relationships are pretty clear"

However, others found that from time to time, there is a need to conduct deeper analysis involving external information. In this view, a process that would deep dive into the future every two to three years and would be updated every other year would be useful. Another option would be to have issue-specific scenario planning drills going on continuously regarding issues that are topical.

"from time to time the kind of in-depth analysis that has a lot of external influences needs to be done because ... with time ... the truths mold in to certain kinds of ... and you don't always question them in the heat of the moment"

One manager felt that scenario analysis would be helpful as long as the scenarios are credible and well-grounded, since it is the kind of work that managers strive to do themselves. However, he pointed out that the amount of resources invested in scenario work needs to be carefully considered. Another manager felt that scenario analysis would be a way to have more forward-leaning information, which would support decision making.

"Well if you could make scenarios that ... can be credible and strongly grounded ... then of course because that is what we of course strive to do ourselves ... It would help in strategic planning, it would help in all kind of goal setting, it would help in discussions, when discussing with investors but then the amount of effort that should be used ... that should be carefully considered"

"Of course this, now it is so that when we have this information line ... we do a report at this point in time and it reviews, it looks backwards ... But if we would have a scenario that would in a way ... look forward then it would be a huge step forward ... it would give considerably better data to support decision making."

Some viewed that SI' could prepare macro level scenarios which would then be analyzed further at the business level. However, one interviewee emphasized that he does not need any more scenarios at the macro level since there are many actors who provide them already and some of them may be better than ours. However, regarding business or company level information, scenario analysis was found to be interesting.

" corporate is always the macro view, ... they could of course present one or two scenarios based on macro indicators ... I think it would definitely be good if if they could at least predefine something and then we

could discuss those and sometimes come up well yeah that's quite ok, we can either refine it to say well not really relevant so we, our business just react on that really"

"on the macro level, I don't need an more scenarios ... because there are many actors out there who are already doing them ... and some of them may even be better than ours ... on the industry level, when well done, it would always be interesting, as well as on a company level"

The subject of having SI create scenarios received mixed feedback among the managers interviewed. Some doubted whether SI is the right actor to create scenarios and whether are a suitable method in the first place. Others saw scenarios as a way to look forward and supported the idea. What was clear was that the underlying drivers in the business environment need to be mapped and that it would be useful if SI could monitor them.

The dissemination of intelligence

The main interface to SI seemed to be the Plaza and only a few interviewees referred to the other SI reports during the interview.

"these kind of like macro level things then I have not gotten much out of them ... not because they would not be important, but because they have rarely included the type of things that I would feel I would not have thought about or bumped into before ... because I aim to follow macro things very actively by myself in any case "

However, among those who did, there appeared some criticism towards their quality and managers appeared to have difficulties perceiving what is relevant and what is not in the reports.

"it is almost impossible to know what is important and what is not when they are just clips drawn from somewhere and in a similar vein I think that sometimes the monitoring of competitors' financial figures has also been poor ... they are probably right in a mechanic-mathematic way but they would never have been included in McKinsey presentations because they do not necessarily monitor what is important ... and when they aim to describe long term development then everyone can draw their own conclusions ... figuring out the best presentation format there is its own technical skill ... And the ones we have used I find that they are just simply not very good ... which has limited their usefulness ... if the table is not built right then I do not have the energy to try and interpret it ... you should do it right from the start"

However, the WAXYZ publication was generally found to be a good book on the macro level. It was used in client discussions to present how XYZ sees the world and given to people in job interviews, for instance. It was also found to have raised awareness among XYZ's employees regarding the company's potential in emerging markets.

"in this kind of macroeconomic level then I find this World around XYZ to be a good book and I also use it as slides when discussing with customers to explain that this is the way we view the world"

Currently, SI is hardly interactive since the alert e-mails are the only interface for some users. It was emphasized that SI should promote itself through having discussions and arranging review events where relevant managers would meet together with SI personnel to have a look at the business environment, as well as going through SI products and giving feedback on them. It could also be a way for SI to come closer to its customers and interact with them. This was seen to increase information and it would also be a way for SI to get closer to the business.

"I wonder how interactive it is when you only receive e-mails ... BI ... should have discussions ... or events on how it could be developed ... especially at the XYZ level. And why not on segmental level also ... to go there to the meeting room 501 and gather all of the relevant managers there, the ones who make decisions about this company and have a look at where the world is heading. Regarding the business environment and such, and also regarding BI's products ... bringing it closer, allowing people to present questions and such, it increases information ... this kind of, it would need to get out there more ... this kind of interaction would also surely bring the proximity to business and to the company's operations"

One manager pointed out that it would be helpful for managers if a SI analyst would get to know the raw data, analyze it further and then the SI analyst and the decision maker would discuss the information together to form an educated guess on its implications.

"sometimes you have limited time to get to know the raw data and to turn it into graphs and stuff so if someone has gone through some of this effort beforehand ... and then we would discuss. Let's say you would have gathered some data package for me ... then if you have already thought about it yourself while gathering the figures and the date then it speeds up and facilitates the conversation that we could then have ... when that information is gathered and analyzed then if forms a good basis for discussion ... that could then take place and conclusions could be drawn and we could form a sort of an educated guess together, I think that is one way for Business Intelligence to add value"

It was also suggested that instead of feeding the same things all the time, SI could pace its offering based on the management's yearly calendar. They could find out when management is making strategies, planning or budgeting in order to better target their information impulses.

"you could, for instance, have a look at the top management's yearly calendar like when they are we doing strategy work, when are we planning, when are we budgeting ... if a kind of an information impulse could somehow be fed then there in suitable phases ... then I think it could be really good ... if now you have like the same kind of information all year round then you get kind of like numb ... you have to have something else there"

There was an explicit interest towards having SI arrange discussions or small seminars on topical issues where there would be decision makers present and SI could present what type of information is offered, promote their services and allow for people to get to know the SI personnel. SI could build a frame for these events through the signals it has picked up, and the attending managers would then bring this to life through adding their business knowledge and discussing the issues. In order to disseminate this information at a global level, these seminars could be videotaped and sent to XYZ's locations around the world as a webcast, this was thought to make SI more open, but it would require more resources.

> "sometimes it could be good to arrange these kinds of discussions where there would be more people present and BI could present what they have thought and what kind of information they could provide, whether it would be arranged a couple of times a year, for example, to like show what other thing BI could also provide --- then it would be easier to answer then when you would know what is available"

> "it could be a series of small seminars ... not too often but for example ... every quarter .. and it would be recorded so that it shows in each of our 50 video conference place ... it would be globalized and in that way, it could have some significance"

SI should also raise more awareness regarding their offering and be more active than before. For instance, targeted marketing was suggested as a way to promote SI not only as an information provider but a service producer that can also mold data and even build ready presentations in addition data gathering. Many interviewees pointed out that even though they know that these kinds of services are available, they were not sure how many others were aware of it.

> "you could be even more active than you have been ... for instance you could in a targeted manner, even more actively ... talk about your new offering or ... promote yourselves ... not only as an information provider but ... as service providers ... I know that if I call there that I need this and this, I know that I will get it ... But I'm not quite sure how many knows this."

> "somehow like how to get the busy people we have out there to get more engaged, to have them realize what is provided ... the kind of quality improvement and promotion type of activities ... in order to have BI as the preferred partner you need to be somehow convinced that they provide good service, that they have good information, and you need to know what is there."

> " The other day ... I wanted to have some ... key indicators of some of our peers for a strategic comparison and I sent to business intelligence in [a specific Business Line] .... it didn't take an hour and then I had a full spreadsheet... and as it happens you know there is a goldmine you can dig out of. ... And I didn't know that"

However, some managers acknowledged that much depends on the decision makers' activity as well - whether they will utilize it or not.

"I don't know whether your current way, whether your current way has been bad in any way, it has been, the information has been available and it has more been a question of people's own activity"

As an example for ways to promote its offering, SI could develop a regular communication, through a link in an e-mail, for instance, that would be somehow amusing so that people would like to visit the site. SI could also send out open invitations to visit their department for some coffee, for instance, or make a road trip to other departments to explain what it has been doing, what is new and where the function is heading.

"some like regular, maybe sending a link to a BI-newsflash through e-mail ... if you could make if funny somehow that people would really like to have a look at what it is ... then people would start to always go and read the newsflashes ... so that you don't just rely on people's activity ... send some open invitation for coffee in your office or arrange an introduction day where you explain about your function ... or go on a road show here"

Another way for SI to communicate information and to harmonize its operations would be to include it in the new intranet that is currently under work. However, there were mixed opinions on whether the internet portal was the best tool to be used in SI activities. It was pointed out that if SI was to function based on social media and interactive databases alone, then a large portion of decision makers would be left out of the loop because they are too old to use those kinds of tools.

"the best way is that now that they're building the new intra ... then to have this kind of a dynamic BI-thing that can be used by the whole company ... it would have both XYZ-level BI activity and it would also have different segments', they would be there as a combined offering and in a reasonable format ... and an employee could then tailor his or her digital desktop ... this would be a big step towards a harmonized way of operating"

"I just have never learned to do it ... if I think of like relevant people in the flow of decision making then over half of them are older than me ... So when we think of focusing all this around databases, around communities in social media where this would in a way take place then many ... decision makers are out of the loop"

It was found helpful if SI and top management would sit down every quarter, for instance, to review the signals it has detected, discuss whether they are relevant and figure out what SI could do to better support top management. One interviewee had these kinds of meetings with his segment-specific SI analyst two or three times a year where they browse through the reports and review whether they answer to the questions that the customers have.

"interacting also towards top management, it would add value ... let's say once a quarter BI and top management would sit down and ... in that event ... you could then bring up all kinds of weak signals that you have detected and ... ask whether they mean something and whether they should be looked more into and on the other hand ... you could have this type of discussion then that what could BI do to better support management"

"we have this kind of session couple or three times a year ... where we look through the reports ... and kind of ponder whether they're good or not ... we try to figure out whether they answer the questions that we have"

The interviews revealed that for many managers, the Plaza was the main interface to SI activities. Only a few managers brought up the segment specific or macro reports drawn by SI and among those who did, there was a lot of criticism regarding their usefulness. However, the WAXYZ report was found to be a useful communicative tool. It was seen that the dissemination of information currently works one-way and lacks interaction. One manager pointed out that SI could disseminate information through having discussions with managers. It was also suggested that SI could better target its offering through providing different things during different phases in the management's yearly calendar. Many managers pointed out the need to have SI promote its services more. The function could arrange meetings or road shows or host workshops – set up events where the customers and the service providers could meet up to discuss about the things that SI can offer and the things that decision makers need.

SI's role in the future

It was estimated that SI's role will only grow in the future as the time span for knowledge transfer has gotten shorter and the sources of information are changing and becoming more versatile. One manager pointed out that more resources should probably be allocated to developing long term plans so that the SI function would not be reduced to a kind of a sales support tool.

"Their role will grow and get more complicated, but this time span for information flows is already getting shorter and it will only decrease more. In addition, the sources for information are changing and becoming more versatile so yes, I believe that there will be a need for it, even more than before"

" so we probably should allocate more resources to this development of long term plans so that we are not reducing business intelligence to kind of sales support tools which I think it's, it can be used yes but it's probably not the major task for business intelligence."

Primarily, SI should become more of a business partner to the businesses and at the concern level. At best, SI can produce the kind of data that can be used to direct the whole organization. Currently, segment level SI probably supports decision making, but at the concern level, it was not seen to produce the kind of insight that one could systematically react to.

> "the usefulness is like really important, it is, at its best it can produce the kind of data that it can like guide the whole company ... that it can guide what we should do. But, the problem that I find is that we it is not harmonized ... these functions have been dispersed so that there are separate BI actors here and there and they should also ... be centralized and have similar reporting formats and –ways making it more compact, in a sense, it would definitely be ... primarily I view that BI should be like a business partner. That it would offer, like it probably is ... in [Segment 3], [Segment 3]'s BI supports [Segment3]'s business strongly ... that is the way it should work. But when you have also the concern's point of view, to be able to guide the whole company and now ... it only kind of brings me more pain – I get an awful amount of information and it does not produce the kind of view that you could systematically react to ... rather, you react to it on an ad hoc – basis"

The development of SI should be divided into two phases: firstly, XYZ's SI process, the tools and ways of working should be harmonized. After this, the function could start to improve the content of its services.

> "I would say that there are two stages here: if you would first aim to harmonize XYZ's BI process, in a way, like the tools and the reports and the way of working. That is a big step ... That would be one option. After that comes the development of the content."

Collaboration was also mentioned as an area of improvement. Cooperation between SI and certain functions was found to be beneficial because some businesses have common competitors or even the same customers and the information they have should be leveraged internally.

> " I think we need to have much more collaboration in certain functions and business intelligence is one because we have common, common competitors (yeah) between [Business Line 1] and [Business Line 2] ... for example, or with with, well ... We have even the same customers sometimes, and we don't even have the same information about the same projects sometimes so it could be even as bad as that ... we seem to have the same information but we prioritize differently. ... Something is wrong. Then then then we have not the same (yeah) intelligence, we have different intelligence although we are working with the same project sometimes. So the the collaboration has to be improved."

SI should be even more closely related to strategy work. One manager argued that SI should produce real data that could be utilized in strategic management and communicated both inside and outside the company. SI could be used to ease communication in the sense that it could help explain that as the world is like this and XYZ operates in this way, these are the paths available.

"it relates to like the process of strategic management that it should relate to it more clearly, produce like data, real data that can be utilized as the results of strategic management, communicated both inside and outside that hey, seeing that the world is like this and XYZ operates like this, then this leads to that. It could be used to create these kinds of paths. "

SI should also operate more closely with business development functions in the businesses. Considering that business development is concerned with how to develop the business, which things to let go and what to invest in, SI could help get more information to support this. Business development could then process this information further and present it to the executive team. SI could assume a role where it assists in implementing and communicating decisions. It could help create fact-based stories based on both internal and external data which could be used to communicate decisions.

"In my view, BI relates to this kind of business development, so business development and BI, they have to, there has to be a kind of seamless cooperation and if we think that business development is focused on how to develop the business, what are we giving up, what are we acquiring to replace it, then in that context and in that interface I am sure that it could work that we would develop and think what would be the right pieces to add. And then BI could provide that information and in this way come forward and also business development would then partially bring let's say a bit more digested information for the board ... to decide and discuss upon. "

"also in like implementing, communication, so that it works. It provides the kind of data regarding let's say market shares and demand factors which, based on which we can then create stories about XYZ. It would produce like fact-based stories that would then of course have to be connected to internal information and external information"

One manager divided the external environment into three levels: the macro, business level and company level. He found that currently, SI produces enough macro level data and that no more resources should be put into that. He viewed business level information interesting but by and large, the function had not created much value in that field. The business level SI was found to have the most room for improvement.

"you can perhaps identify three levels: there are like macro things, then there are industry level things and then you have company level things, then let's say you have at least done enough of macro level things. Ok, let's put it this way that you should not allocate more resources to that ... Industry level things are done to some extent, and it is interesting, but I have mainly felt that it does not have that much added value, so that the things you have done there besides distributing external reports has then been giving out industry based consultancy reports that have been made and those are not publicly distributed ... but then in fact this company level then that is the weakest"

All in all, as the world continues to change at an ever-increasing pace, SI services could assume a bigger role in supporting corporate decision making. Each manager interviewed pointed out that their daily work is characterized by time constraints characterize and many stated that they would devote more time to fact-gathering if they would only have more time. Thus, it is reasonable to assume a more targeted, in-depth service from SI would be welcomed. There was clear interest towards having the function be more of a business partner, collaborating with organizational functions in strategy work and business development, for instance. Managers seemed open and willing to help the function develop more towards that direction and to get in contact with the relevant people. However, before any such future developments are embarked upon, SI should focus on harmonizing its current operations and make the network structure work.

4.2.4. Summary

The decision making processes at XYZ appeared to be long and time consuming: decision making took place in many steps and required the participation of many people. Decision making at XYZ is done collectively and from a single manager's point of view, it is more about influencing what things are on the agenda than making actual decisions. As the top management faces external pressure from the board and investors, the organization had a low tolerance for risk and a very analytical approach towards evaluating initiatives – decisions were made only when there was certainty regarding the outcome. For this reason, managers found that the best way to influence decision making is to back one's point of view with accurate and convincing facts. SI, among other sources of information, was found helpful in providing these kinds of facts. Slow decision making seemed to frustrate a lot of the managers and it had led to missed opportunities in the past. Consequently, some managers pointed out that the organization could have a more entrepreneurial spirit and a better tolerance for risk.

All in all, it seemed that SI was seen as a useful and necessary function in the field of decision making at XYZ. The function seemed to have two main roles: firstly, it provides decision makers with forward-leaning, macro level strategic information. Secondly, the function helps to benchmarking operations through providing market and competitor data. This information was then used to challenge businesses' goal setting. The continuous flow of information from SI was found to support the decision making process by providing a bigger picture of the business environment – a mental framework that helps to put decisions into perspective.

However, managers found room for improvement regarding SI and the services it provides. Their development ideas focused around three main areas: improving the operation in the current SI network, expanding the scope of information gathering and improving the analysis of information. Although the current structure of SI was good, there was an explicit need for harmonizing operations within the function and improving the information flows between the different actors in the network. It was found that corporate level SI did not leverage the segment level SI's knowledge of the business. Furthermore, all of the actors had different reporting methods and formats, which made it difficult for managers at the top level to combine the information.

There was also a clear interest towards having SI broaden the scope of information gathering. Although the news service was found useful, many interviewees pointed out that external information gathered from public sources is late by nature. By the time a certain project is announced in the press, for instance, it is too late to act upon that information. Currently, the news service acted as a lagging indicator, helping to monitor projects that XYZ did not take part in or missed completely. This information was then used when giving feedback to sales personnel and improving the bidding process. However, managers pointed out that SI could, for instance, combine external information with company internal information. This could be done, for instance, through gathering data from management systems and experts within the company. Furthermore, SI could also set up a rumor mill where people could feed in weak signals and they would be reviewed, conveyed to people to whom they might be useful and utilized to guide the gathering and analysis of information. Furthermore, SI could set out to build relationships with relevant networks outside the company. It could attend industry-specific events and seminars to get to know the industry players and get a better sense of what is going on in the markets. Through these events, SI could form relationships with relevant industry actors and gain access to the kind of information that is not publicly available.

Managers stated to be overclouded by information from SI and many interviewees pointed out that all kind of summarizing and further analysis on the information provided would be useful. However, a more in-depth analysis was seen to require knowledge of the business and SI was not seen to possess this kind of knowledge. Thus, many managers suggested forming the kind of network structure for SI where analysis would be conducted in cooperation with business level

people. Networking and interacting with other functions and end users was also considered essential in order to tap into the organization's tacit knowledge. People in the businesses could be assigned responsible for monitoring certain competitors, for instance, and reporting their information further to SI who would then mold the data, support it with relevant information from public external sources and then communicate it further to top management and the whole organization. It was generally seen that analysis in SI has to be conducted by someone who understands the business.

SI should also interact and have more discussions with top management in order to better understand their information needs and improve the screening of information. Interaction with top managers would enable SI analysts to gain a better understanding of the business, which would help to target the screening of weak signals, for instance. This could reduce the amount of irrelevant information that is currently fed to top management through SI channels. It was also pointed out that SI could assume a role where it would provide early warnings regarding emerging issues that call for action from XYZ's part. If some signal was seen as critical, there should be a special process for highlighting it and indicating to the end users – the decision makers – that it is a must read. It was seen as important that these kinds of alarming signals would not be fed to top management through the same process as all of the other signals. Rather, SI could have a special topical publication, topical reviews or even just a mechanism for signaling that this document must be read. Furthermore, SI could also send certain kinds of signals directly to managers who they might concern. This kind of targeted SI appeared to be very welcome. All kind of compilation of the information, drawing critical conclusions and turning it into indicators was found to better support decision making.

Decision makers wanted to have more critical conclusions drawn from the information. It was also emphasized that in addition to explaining the issues that might have an impact on XYZ's future, SI should also aim to explain what the impact is and how it will affect the company's operations. However, some managers stressed that there needs to be a clear distinction between the tasks and responsibilities that belong to SI and those that belong to the businesses. It was seen that SI's task is to provide macro level data to support decision making at the strategic level. Any analysis that goes deeper than that is to be viewed as the businesses' responsibility. Furthermore, it is not SI's task to make specific suggestions on how to act upon the information provided, that

would require the function to also take responsibility for the consequences and this responsibility belongs to the business.

The internal SI news portal, the Plaza, seemed to be the most commonly used interface between SI and decision makers. Managers were by and large satisfied with the service, although there was a need to improve the screening of news. However, it seems that the regular internal publications that SI compiles were not that well utilized. Many decision makers did not mention the reports during the interview or stated not use them. There were a few happy customers, but they were the kind of users who had also taken a proactive stance towards SI and molded their segment specific reports with SI personnel through giving specific guidelines and regular feedback. There were no passive end users of SI who would have expressed satisfaction with the reports.

It was suggested that SI should not rely too much on end users' activity in organizing its activities. SI should get out more, visit functions and hold events where decision makers could get acquainted with the analysts and interact more with them. These events could be built around quarterly reviews, for instance, or be arranged whenever there is a topical issue that requires attention. These events or seminars would be a place where relevant managers could discuss together with SI staff on what signals SI has picked up and how they might affect XYZ's operations. Furthermore, these kinds of discussions and cooperative analysis would allow SI analysts to get to know the end users' needs better which would help them improve the screening and analysis of information.

However, decision makers seemed to have very differing approaches to SI. Some managers had regular contact with the function and they cooperated with SI in both routine and ad hoc information requests by explaining their information needs and developing the services together. This user group seemed to have a good understanding of SI's offering and they did not hesitate to contact the function whenever needed. However, other managers appeared to be more passive. Their image of SI focused mainly around the Plaza and many of them were unaware of all the services that SI provides. Those decision makers who had assumed a more proactive approach to the utilization of SI seemed most satisfied with the service and the level of analysis. To them, SI was a helpful partner in their work. However, those decision makers who had a more passive approach to SI tended to consider that there is much room for improvement. These development

suggestions mainly related to improving the screening and summarization of news. However, there seemed to be no resistance towards having SI assume a bigger role in the decision making provides and a majority of the interviewees were eager to help SI improve its services. It was seen that at best, SI could be a business partner – providing information that would help direct the whole organization.

CONCLUSIONS

In this final chapter, I will first present the key findings of the study and discuss their relation to earlier research introduced in chapter 2. Finally, I will conclude by introducing my recommendations for the case company.

5.1. Key findings in the light of earlier research

Viitanen and Pirttimäki (2006) are among the few authors who have set out to integrate the research of business intelligence and the strategy process. In their study, they adopted an analytical approach to strategy and pointed out examining the field from the perspective of other strategic schools of thought, like Mintzberg (1998), for instance, might provide different observations and implications. This study set out to further contribute to the integration of the two fields – SI and strategy work – and it also aimed to adopt broader view on strategy through broadening the scope from the analytical approach to include also the emergent approach and the strategic intent –approach to strategy. The purpose of this research was to find out how XYZ's top management makes decisions in their daily work in order to draw suggestions on how SI could help more in the process.

In this chapter, I aim to present the key findings of this study in the light of the research questions. I will start by reviewing how decisions are made at XYZ. Then, I will map out SI's role in decision making. Finally, I will conclude by determining how SI could assist more in decision making.

5.1.1. How decisions are made

In accordance with Mintzberg's (1994) view of a more committing style of management, I found that decision making, especially regarding long term issues, was done collectively. Instead of formally making the decision itself, decision making was more about influencing what is on the agenda and selling one's point of view through backing it up by relevant facts. However, many

interviewees noted that whilst gathering this fact base, intuition was used to glue the separate pieces of information together into a coherent whole. Mintzbeg (1994) also argues that problem solving needs judgment and intuition in addition to facts. On an individual level, many interviewees stated that they prefer to start their decision making process by gathering data from various sources in order to form a big picture of the subject. This finding is in line with Fleisher's (2003) view on strategic planning and the analytical approach to strategy (see e.g. Porter, 2008).

Many respondents also emphasized the use of colleagues, experts and other tacit information sources in building the relevant knowledge base. Decision makers found that in addition to facts, having conversations with people about the issues helped them in their decision making. It was also emphasized that it would be useful if SI could expand its scope to include tacit information both inside and outside the company. In addition to hard data, managers found it useful if information was analyzed in diverse teams with business knowledge and if explicit external knowledge was combined with tacit internal information, such as rumors and people's knowledge, and soft signals from the external environment gathered from extra-organizational networks. The importance assigned to soft information is in line with the emergent approach to strategy and Mintzberg's (1994) view of strategic thinking. However, the finding that short term decision making at XYZ was seen to be in line with the company's long term goals suggests that the company employs a more analytical and structured approach to strategy such as a strategic intent (see Hamel and Prahalad, 1989) or even an analytical approach (see Porter, 2008).

Decision making was found to be slow and rigid, and the organization was risk averse. Initiatives needed to be carefully analyzed before they were decided and acted upon, which had led to some missed opportunities. This concurs with the criticism towards the usefulness of strategic planning. For instance Fleisher et al., (2003) argue that a lock-step planning approach impedes innovative and dynamic decision making and required marketplace action. However, all of the decision makers wanted to have a good picture of what is going on in the business environment and they strived to find information from various sources in order to form this picture and to keep it up to date. This implies that they want to stay alert to changes in the marketplace that can have an impact on the successfulness of the strategy employed. Even though the information communicated through SI's news portal was found to be late by nature, action was still taken if a significant signal appeared there that had not been noticed before. This suggests that the

implementation of the company's strategy is not refined in specific intervals only, but adjusted on an ongoing basis (see e.g. Downham, 1996)

5.1.2. What is SI's role in decision making

SI had a more of a background role in decision making in the sense that it helped to build and maintain a bigger picture of how the business environment is doing, but it did not provide enough information in itself in order for decision making to be based solely on information from SI. Rather, the knowledge base for decision making was found to be gathered from various sources. Furthermore, decision makers emphasized that it is not SI's role to try and draw suggestions on how to act on the information provided. This concurs with Mintzberg's (1994) view of strategic planning. In his view, planners should aim to broaden managers' consideration of things instead of trying to provide the right answers. Many of the development ideas were related to deepening the analysis of information, which was seen highly valuable. This is very much in line with Fleisher et al.'s (2007) view that analysis is the part of the intelligence process where SI can generate the greatest value.

With reference to the framework for this study (Figure 7, page 38), SI at XYZ was found to gather information only from external sources. However, there was an explicit need to have SI broaden the scope of information gathering to include company internal information as well. There was a specific interest to have SI combine external data with tacit information such as rumors and the business knowledge of experts within the company. Furthermore, the SI function currently screened and combined information, as in the framework based on theory, but it was found that the analysis of information could be conducted together with experts in the company or even with the end users of the SI product. It was found that analysis requires knowledge of the business and that currently, SI does not possess that kind of knowledge. Decision making at XYZ seemed to have characteristics of all of the approaches to strategy introduced, and thus it was difficult to differentiate any specific approach's implications regarding SI needs. It was generally found that SI could support decision making more through figuring out decision makers' needs, interacting more with its customers and through leveraging company internal knowledge in the analysis of data.

5.1.3. How could SI assist more in decision making

The findings of this study imply that SI should improve the information flows and relationships between different actors in the network. When comparing findings to the framework for organizing the strategic intelligence network (Figure 6, page 36), it seems that there was room for improvement in all of the information flows and connections in the network. In the current formal organization, the roles employed are those of a global coordinator, internal boundary spanner and strategic decision maker (see Viitanen and Pirttimäki, 2006). The Group Strategy department's SI function represents the role of a global coordinator, segment level SI-analysts can be considered as internal boundary spanners and the end users – XYZ's management – are the strategic decision makers.

The news screeners for the Plaza and SI analysts can be viewed as gatekeepers. However, the findings suggest that feedback did not flow well from global coordinators to the gatekeepers and from strategic decision makers to global coordinators. The gatekeepers were considered to be unaware of the business and lacked the ability to screen relevant data. Consequently, the end users suffered from an overload of information. Furthermore, there was also a need for global coordinators to have discussions and receive feedback from strategic decision makers in order to improve their screening and to learn to pick up the right kind of signals (see Viitanen and Pirttimäki, 2006)

Regarding the incoming flow of information, current SI seemed to only receive public external information. However, there was a clear interest towards having SI use other sources of information as well, such as non-public external data through leveraging external networks and tacit information from within the company through cooperating with business level people and the top management. First of all, there was a suggestion of having SI attend seminars and network with relevant industry people in order to collect data. This would imply that a role of an external boundary spanner is also needed in the organization (see Viitanen and Pirttimäki, 2006). Secondly, the framework should include flows of information coming from internal boundary spanners, experts and strategic decision makers to the global coordinator. All of these actors can help to provide tacit information about the business that would improve the analysis (see Choo 2002).

Many of the respondents stated to be lacking in-depth analysis from a business perspective and pointed out the need for further collaboration with business level people, top management and the segment level SI functions. Currently, the network does not conduct analysis together with experts, for instance. Nor does it leverage the business level information that internal boundary spanners have. It seemed that global coordinators and internal boundary spanners both conducted analysis separately, instead of cooperating. However, seeing that the corporate level SI was viewed to lack relevant business knowledge, interaction with people who do was regarded as highly valuable. Top management was also considered to be a possible source of business information that would help in analysis. It was suggested that SI and top management would sit down and discuss the signals together. This implies that the framework should also have a joint analysis relationship between strategic decision makers and global coordinators.

Similarly to Viitanen and Pirttimäki's (2006) proposed model for organizing SI, many of the respondents felt that SI should interact more with the business level people and that analysis should be deepened so that it would include a business level perspective. The current network structure did include centralized SI and decentralized SI at the business segment level, but information was not found to flow freely in the network. Furthermore, it seemed that the current structure does not leverage internal experts in analyzing the information (see Viitanen and Pirttimäki, 2006). Consequently, many of the interviewees stated that it would be useful to have someone who has business-specific knowledge analyze the information.

One manager also pointed out that SI could create ties with external networks and gather information through attending industry relevant seminars and discussing with various actors there. This implies that SI in XYZ could also assume a boundary spanner's role through connecting networks within XYZ to extra-organizational networks by forming relationships to central people in other networks (see Viitanen and Pirttimäki, 2006). This would enable it to gather unique information that is not publicly available and thereby differentiate from the competition.

Many managers pointed out that SI should be done in cooperation or through a joint venture with business operations in order to ensure that the products meet the needs of decision makers. Furthermore, managers found it useful if SI would leverage the business knowledge of company internal experts in the analysis of information. This supports Fleischer et al.'s (2007) view that

networking adds value and that analysts should build networks with experts throughout the organization.

The idea of having SI set up a rumor mill implies the importance of including also soft information in strategy work (see Mintzberg, 1994). It was also argued that SI could provide more early warnings and emphasize critical signals. This resembles Mintzberg's (1994) role of strategic planners as catalysts, where they use provocation or shock tactics to wake managers up to signals that are critical for the business.

The findings of the study suggest that the lower analysis goes from the macro level and the more it is done at in isolation at the corporate SI without discussing with others, the SIgger is the risk of getting it wrong. Fleisher et al. (2007) address the need for business level knowledge by suggesting that analysts would be deployed on-site and they would have regular contact with managers, negotiating teams and front-line decision makers to ensure that analysts understand shifting agendas, prime movers and receive quick feedback on their outputs. This is in line with some of the managers' suggestion that SI should interact more with its end users in order to better understand the business and to understand which signals are important.

5.2. Recommendations for the case company

The findings suggest that the improvement of XYZ's SI activities should be divided into two stages: firstly, SI should improve the information flows inside the current SI network. The function should increase interaction and harmonize operations between the actors who are currently dispersed around the organization. After this, SI could start to improve the content of its services. This could be, for instance, improving analysis and increasing decision makers' awareness of the function. The following table summarizes the key findings of this study in the light of the research questions. It also considers the implications of the findings for XYZ.

Table 5: Key findings of the study

Research question	Key findings	Implications for SI
How are decisions made at XYZ?	Decision making is done in groups	Decision making is more about influencing what issues are on the agenda
	Decision making processes are slow	Any pre-work that can be done speeds up the decision making process
	The organization is risk-aversive	Managers need to build a strong fact base in order to "sell" their suggestions
What is the role of SI in decision making?	Background for decision making	SI helps managers to form a bigger picture of the business environment
		SI helps to set the right level of ambition in goal setting. In this sense, it is also a management tool in that helps to challenge the business segment's goal setting
	Supports company internal information	SI provides information that helps to benchmark operations. It also provides more forward-leaning, strategic level information
	Lagging indicator	Helps to monitor projects that XYZ has missed/ignored, thereby providing feedback to sales people
	Communicative tool	Helps in discussions with different stakeholders, both internally and externally.
How could SI assist more in decision making?	Mapping out top management's information needs	Discussions with managers would help SI improve the screening of information
	Increasing analysis	Managers are currently overflowed with information. SI should provide more conclusions and create company-wide opinions on issues
		Analysis requires knowledge about the business
	Increasing interaction	The function should first improve the information flows in its network
		The SI network should cooperate with company internal experts and decision makers in conducting analysis

In reference to the modified model of organizing SI (Figure 6, page 36), I recommend that SI should be organized so that it would include all of the five roles – a central coordinator at the head office level, internal boundary spanners at the segment level, external boundary spanners, experts and decision makers. The central coordinators and both internal and external boundary spanners would also act as gatekeepers, deciding on what information enters and flows in the network.

I suggest that the scope of knowledge gathered could be expanded to include also non-public external data and company internal information. Combining these types of information would help to build knowledge that is unique for XYZ and thereby create competitive advantage. It was found that at best, SI could become a business partner and in my view, this would require it to combine various sources of information both inside and outside the company in order to create a better view of the business situation.

Regarding information flows, the global coordinator would be in charge of gathering external information from public sources, as it currently is. Furthermore, the global coordinator could arrange for some people in the network to assume the role of an external boundary spanner in the sense that SI would also gather non-public external information. This could mean, for instance, that someone from the SI function could visit relevant industry events and seminars to interact with the people there and gain a better understanding in the market. Through this kind of networking, it could be possible to pick up non-public information about the state of the market and where it is heading.

As opposed to the current structure, the information flows between the internal boundary spanners and the central coordinator could be improved. Currently, it seems that the operations are fairly dispersed and knowledge is not shared. However, the segment level SI people, through their relationships with the business level people, can access relevant business data that could be very useful to share with the whole network.

Furthermore, XYZ's SI could leverage business knowledge in the analysis of information through consulting experts and decision makers in the analysis phase of the intelligence process. This could be done through either having business level people responsible for reporting on a certain competitor, for instance. This way, the analysis would happen at the business level and SI's task would be to support this by providing the necessary external data. Another way to incorporate business knowledge in the analysis stage would be to conduct the analysis in cooperation with the decision makers. This could be done through one-on-one discussions or through arranging topical meetings where relevant managers would be present. SI could host these meetings and realize them as structured workshops that focus around a specific issue. In these events, SI could provide the necessary background information and then enable the

managers to analyze it together in diverse teams. The revised framework for the organization of SI is presented below:

Figure 9: The revised model of SI at XYZ (adapted from Viitanen and Pirttimäki, 2006)
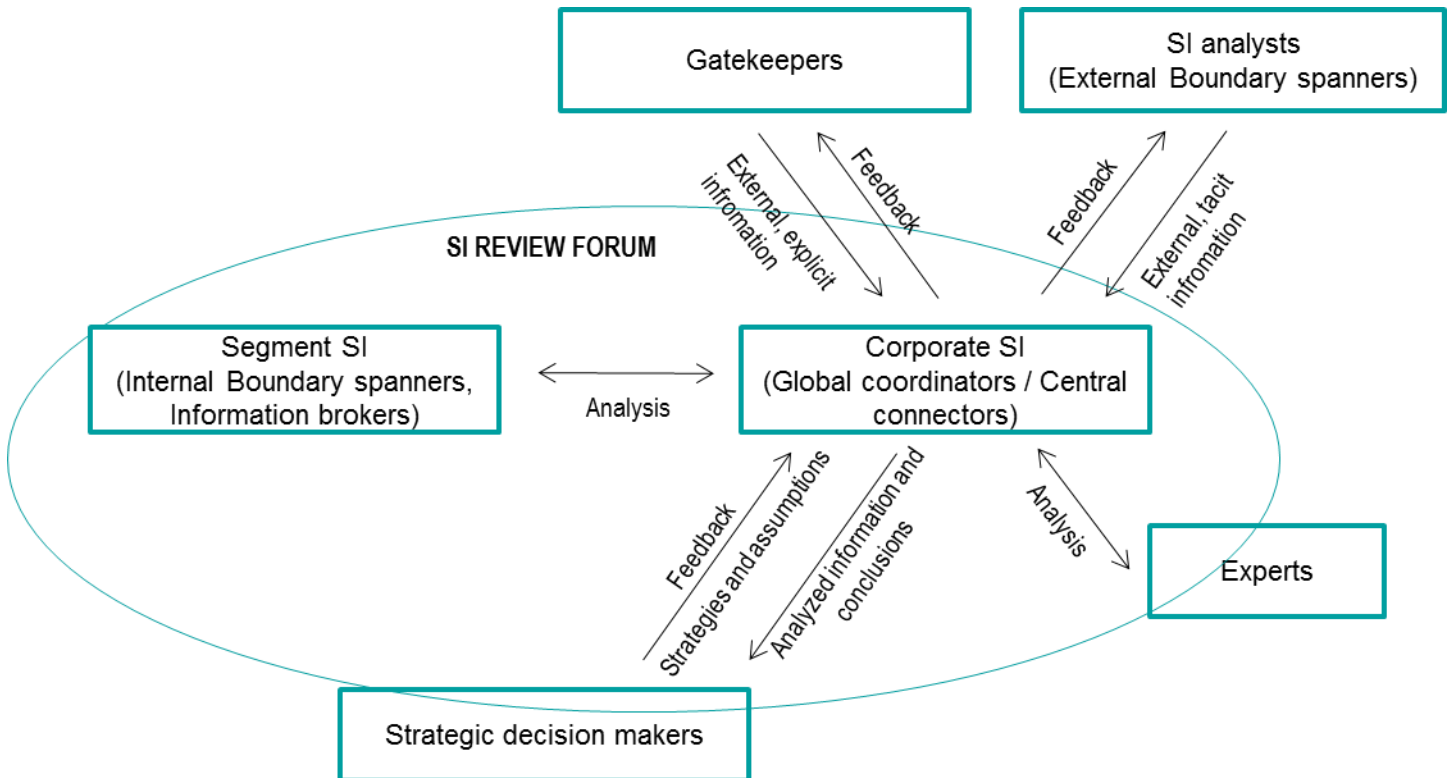

The analysis could be improved through increasing cooperation. The global coordinator could conduct some of the analysis in cooperation with the internal boundary spanners, with experts and with decision makers themselves. Conducting analysis together with the corporate- and segment level SI people would ensure that both the XYZ wide and local perspectives are taken into account. However, I suggest that SI should improve the cooperation between segment level SI – the internal boundary spanners – and business people, between decision makers and the corporate level SI, and between experts and the corporate level SI. A first step towards bringing the analysis closer to the business could be to improve these cooperative analysis flows – or to build them in the first place (see Viitanen and Pirttimäki, 2006).

It should also be ensured that feedback flows freely in the SI network. For instance, many of the interviewees considered that there is a lot of improvement to be done regarding the screening of

information. They suggested that SI should meet face to face with its end customers to better figure out their needs and also in order to improve the analysts' screening skills and to help them build a better understanding of what can be viewed as weak signals. This is similar to Viitanen and Pirttimäki's (2006) model where feedback flows between decision makers and global coordinators and further to the gatekeepers.

The findings suggest slight revision to the theoretical framework for this study (Figure 7, page 38). In my opinion, the role of SI in decision making at XYZ should be improved towards the following direction:

Figure 10: The future role of SI in decision making at XYZ
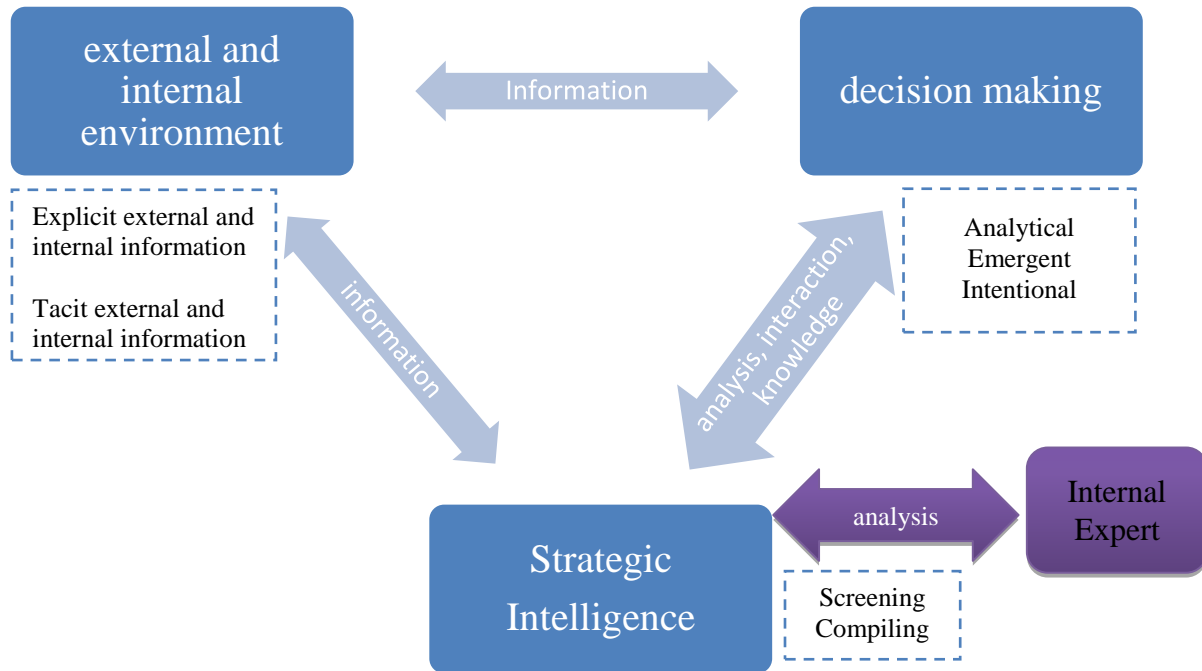
In this revised operating model, I suggest that SI should gather information from both external and internal sources. This would imply broadening the scope from the currently used external sources to also include information from other external networks through having SI attend industry seminars and form networks with extra-organizational actors. Furthermore, SI should also utilize explicit XYZ internal information that is available from the management systems and leverage the knowledge of business level people in the analysis of data.

SI would be responsible for screening and compiling the information gathered. However, the right scope for screening would be determined through discussions with SI's end users – the decision makers. The analysis of data should be conducted in cooperation with company internal experts in order to tap into relevant business knowledge. In practice, this could be done through assigning certain business people responsible for reporting on a certain competitor, for instance. Some of the analysis could also be done jointly with the managers to whom the information is conveyed. SI should, for instance, work more closely with the segments' business development functions and provide them with information that is relevant in their work.

In this framework, the decision maker's approach to strategy was not found to have that much significance. It was found that XYZ's top management has different ways of making decisions,

but they all stated to need SI services to support their decision making so the need for SI services is present regardless of the approach to strategy employed. Furthermore, there appeared to be a particular interest towards receiving more tailored support for decision making – especially at the higher organizational levels. If the cooperation between SI and the decision maker would increase and become regular, it would be possible for SI analysts to learn how to serve decision makers' needs even though different executives would employ different decision making processes.

Overall, the case company seemed to have a good basic structure for strategic intelligence activities. However, there was room for improvement regarding the improvement of information flows between the actors in the SI network. In my view, a lot of improvement could be made by increasing collaboration and the flow of information. Furthermore, the function should approach decision makers more and increase their awareness of the services it provides.

The finding that proper analysis requires knowledge of the business could be further researched. It would be interesting to study whether SI could help more by providing analysis or by being a support function that provides compiled data to experts and decision makers who analyze the information by themselves.

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World Around XYZ 2009

World Around XYZ 2010

APPENDIX 1: THE INTERVIEW THEMES IN FINNISH

Haastatteluteemat - BI-palveluiden hyödyntäminen päätöksenteossa: case XYZ

Päätöksenteosta yleisesti

(kuinka päätöksiä tehdään, millä perustein)

   I. *Yleisesti ottaen, minkälaisia pitkän tähtäimen päätöksiä teet ja miten?*
  II. *Minkälaisia lyhyen tähtäimen päätöksiä teet ja miten?*
 III. *Yleisesti tasolla, koetko että päivittäinen päätöksenteko XYZssa on enemmän ns. tulipalojen sammuttamista vai onko aikaa tehdä harkittuja päätöksiä?*
- *Minkälaisten päätösten pitäisi mielestäni perustua faktoihin ja minkälaisia päätöksiä voi tehdä intuition pohjalta?*
 IV. *Kun päätöksenteko on faktapohjaista, onko sinulla tietynlainen prosessi päätösten tekoon?*
- *Mitä lähteitä käytät ja mihin tarkoitukseen, mihin lähteisiin luotat?*
- *Koetko, että löydät tarpeeksi tietoa?*
- *Onko jotain faktatiedon lisäksi, joka voisi auttaa sinua päätöksenteossa?*
- *Kuinka pysyt ajan tasalla niiden lähteiden suhteen joita käytät?*
- *Kuinka vastaanotat tämänkaltaista tietoa?*

BI:n rooli päätöksentekoprosessissa

(Kuinka se auttaa päätöksenteossa, mikä on tarve BI:lle?)

Millä tavoin XYZn Business Intelligence avustaa sinua päätöksenteossa?

- *Oletko tutustunut sen tarjontaan?*
- *Otatko sen huomioon päätöksenteossa?*
  -   I. *Uusien tavoitteiden määrittelyssä*
  - II. *Resurssitarpeiden määrittelyssä*
  - III. *Mahdollisuuksien ja parhaiden vaihtoehtojen tunnistamisessa*
  - IV. *Liiketoimintojen kilpailutilanteiden arvioinnissa*
- *Pidätkö sitä hyödyllisenä?*
  -   I. *Onko informaatio luotettavaa, oikea-aikaista ja vastaa tarpeisiisi?*
  - II. *Auttaako palvelu huomaamaan heikkoja signaaleja ympäristössä joita et muuten huomaisi?*
   I. *Miten Business Intelligence voisi tukea päivittäistä päätöksentekoasi paremmin?*
- *Koetko että Business Intelligence olisi enemmän avuksi jos se tarjoaisi pidemmälle vietyjä analyysejä tarjotusta informaatiosta?*

BI:n rooli tulevaisuudessa

(Voisiko BI osallistua enemmän, kuinka voimme tarjota parempaa palvelua?)

I.   *Koetko että Business Intelligence –palveluita tarvitaan XYZssa myös tulevaisuudessa?*
II. *Miten koet että Business Intelligence:n tulisi toimia tulevaisuudessa?*
- *Koetko että se voisi avustaa sinua enemmän päätöksenteossa?*
III. *Kuinka information analyysiä voisi parantaa esimerkiksi toimintaympäristöä tai kilpailijoita koskien?*
- *Olisiko siitä enemmän apua jos analyysi sisältäisi esimerkiksi erilaisia skenaarioita jotka pohjautuisivat raporteissa esitettyihin tietoihin ja estimatteihin?*
- *Olisiko enemmän vuorovaikutteinen lähestymistapa informaation analyysiin avuksi?*
- *Olisiko mielestäsi hyödyllistä jos Business Intelligence yhdistäisi ulkoista tietoa ja yrityksen sisäistä hiljaista tietoa?*
IV. *Mikä olisi mielestäsi paras tapa viestiä relevanttia tietoa?*

APPENDIX 2: THE INTERVIEW THEMES IN ENGLISH

the use of BI services in decision making at XYZ

decision making in general

(how decisions are made and on which basis)

In general, what kind of long term decisions do you make and how?

What kind of short term decisions do you make and how?

In general, do you see daily decision making at XYZ as either putting down fires or is there time to make planned decisions?

In your opinion, what kind of decisions need to be based on facts and what kind of decisions can be made based on intuition?

When fact-based, do you personally have a certain kind of a process for making decisions?

What sources do you use and for which purposes, what kind of sources do you trust?

Do you feel that you find enough information?

Is there something in addition to information that could assist you in decision making?

How do you keep up with the sources that you follow?

How do you receive this information?

The role of BI in the decision making process

(how does it help in decision making, what is the need for bi?)

How does XYZ's Business Intelligence help you in decision making?

Are you familiar with what it has to offer?

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Do you take this into account in decision making?

In defining new goals

In reviewing resource requirements

In identifying opportunities and best options

In reviewing businesses' competitive situations

Do you find them useful?

Is the information reliable, timely, and suitable for your needs?

Does the service help pick up weak signals from the environment that you would not otherwise consider?

What could BI do to better support your daily decision making?

Do you see that Business Intelligence could assist you better by providing further analysis on the information provided?

The future role of BI

(could bi be more involved, how can we offer a better service?)

Do you find that there is a future need for Business Intelligence services at XYZ?

How do you see that Business Intelligence should function in the future?

Do you see that it could assist you more in your decision making?

How could the analysis of information on the business environment, competitors etc. be improved?

Would it be more helpful if the analysis included e.g. different scenarios based on the information and estimates presented in the reports?

Would a more collaborative approach to information analysis be helpful?

Would you find it valuable if BI combined external data with tacit information from inside the company?

What would be the ideal way of delivering relevant knowledge?