Business Agility

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KTH Industrial Engineering
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Master of Science Thesis
Stockholm, Sweden 2012

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Master of Science Thesis INDEK 2012:94
KTH Industrial Engineering and Management
Industrial Management
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Abstract

The global business climate has for many years been changing increasingly faster and some organizations have started to focus on becoming more agile to cope with this issue. In this report, the factors that a number of selected Swedish executives find to affect business agility the most are investigated and categorized into a business agility assessment framework. An abductive research approach has been used to obtain the results. In order to find out the validity of the model and to quantify the main categories and sub categories relative importance, a survey answered by 32 managers at different levels in top performing Swedish companies was used. The findings showed that the categories: corporate foresight; internal and external collaboration; information technology; and organizational factors, all with additional sub categories, where the ones that the executives thought to be the most important for organizations to focus on in order to be able to respond when change is necessary. Corporate foresight was the main category that got the highest result, but the single most important sub category was found to be internal cross-functional collaboration.

The findings in this report can be used by e.g. consultancy firms as a base for developing a business agility assessment tool, which can be used to analyze clients and be able to illuminate areas of improvement.

Key-words: Business agility, corporate strategy, assessment tool, consulting framework

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1 Introduction

In this chapter the background of the study and the research gap is put forward. It is followed by a presentation of our research problem, purpose, and questions. It ends with a discussion of the delimitations needed to be made.

1.1 Background

The global competition have for many years been forcing organizations to cut cost to be able to survive. Having equity tied up in large stocks is history and many organizations have adopted different lean philosophies in order to meet the fluctuating demand of their products or services, and success stories due to "leanness" can be found in all kind of industries (Verstraete, 2004). But what happens when the pace of more radical change in the business market increases? Lean organizations might be good at scaling its production, but when it comes to adapting to other changes, such as new technologies, business models, customer demands, sales channels or regulations, they sometimes stand perplexed (Verstraete, 2004). Hugos (2009, p.13) argues that "just as we recognize the efficiency of the assembly line as the great wealth producer of the industrial economy, we will see the responsiveness of the real-time enterprise as the great wealth producer of the information economy".

To cope with this, many organizations have instead started to focus on how to become more flexible. In a review of business agility research, Sherehiy et al. (2007) says that the concept of business agility has been around for a few decades and been a main topic of research in both industry and academia due to the need for organizations to cope with unpredictable, dynamic and constantly changing environments. This is also supported by Mathiassen and Pries-Heje (2006). Business agility is driven by change and though change is not something new, it is now occurring more rapidly than ever before (Tseng and Lin, 2011). The term "business agility" might by some be considered to be just a new fashion word. We argue that this is not the case and that it also is important to understand that it is not a tool or technique. Business agility concerns the overall strategy of the company (Sherehiy et al., 2007), and is a shorter term for organizations ability to detect and respond to changes (Tsourveloudis and Valanvanis 2002; Overby et al. 2005; Tseng and Lin 2011). Overby et al. (2005, p.296) defined the notion enterprise agility as "the ability of firms to sense environmental change and respond appropriately". Based on a study of earlier published articles, Tseng and Lin (2011, p. 3694) argued that "agility is considered the winning strategy for becoming a global leader in an increasingly competitive market of quickly changing customer requirements".

This importance of achieving high business agility has come to the notice of many organizations worldwide. As an example, IBM has launched a major business agility project due to a global CEO study in 2010, which revealed a strong correlation between agility and success, and resulted in a large focused business agility study (IBM, 2011). In a 2006 McKinsey Quarterly global survey of 1562 executives, almost nine out of ten responders stated that agility is either extremely- or very important to business performance and 91% thinks that the importance of agility and speed has increased in the past five years (The McKinsey Quarterly, 2006). The Boston Consulting Group argues in an article that agility is the new competitive advantage (BCG, 2011). Microsoft Executive Leadership Series publishes books for executives, and in 2009 they published the book "Business Agility: Sustainable Prosperity in a Relentlessly Competitive World" (Hugos, 2009). Based on a large study by Phillips and Wright (2009), the agility revolution is also highly present in the financial service business. Kodak is a recent example of a former successful organization that lacked the ability to adapt to the changing environment, which have led to the company filing for bankruptcy protection (Bloomberg, 2012). Another example is Facit AB, a mechanical calculator manufacturer who did not manage to adapt to the changes in technology, and finally was liquidated (Petersson, 2003).

In a large survey among Swedish executives, made by a Swedish IT- and management consultancy firm, agility was stated by a majority to be one of the most important factors for their organization in the future. With this survey as a background, the consultancy firm has asked us to develop a business agility assessment tool, which will be able to present a result that can serve as a discussion platform when meeting executives of potential clients. The tool should not be tied to any certain type of organization or industry (i.e., it should be generic). In this report, we present a framework that will be the foundation for that assessment tool.

A gap we have found in the literature on business agility is that the main focus is on either manufacturing organizations or software development. Although the main focus in this study will be to develop a framework, which will be the foundation for the business agility tool, we also hope that the results put forward will contribute at some level to the research field on the business agility theory that focuses on industry transparent assessments.

1.2 Research Problem and Purpose

Research problem: To develop a generic business agility framework that can be used as a foundation for a business agility assessment tool.

Purpose of the study: To find relevant inputs, applicable to most types of industries, that affects organizations agility. These should be put together, with appropriate weightings, in a business agility assessment framework.

1.3 Research Questions

- Which are the most relevant enablers of business agility that can be used in a business agility assessment framework?
- Could these enablers be applicable to most types of industries?
- How can these enablers be weighted?

1.4 Delimitations

A study of all business agility theory with the aim of locating all factors that enables agility would require an infinite amount of time. To be able to accomplish our study during the given five months, a number of delimitations were needed to be set in place.

Firstly, the framework put forward in this report will serve as a base for a business agility assessment tool that will be used by a consultancy firm in Sweden. They need an assessment tool that presents a result which can be used as a discussion platform on a high strategic level during business meetings with C-level managers (CEO, CFO, CIO etc.) of potential customers. The assessment process will occur in an environment in which the C-level managers are present. This requires both the touched upon areas during the assessment process and the result presented after the assessment to be formed in a way that is easy to grasp in the minds of C-level managers. An assessment should point out weaker areas that can be investigated more thoroughly. The framework should thus have a high strategic focus, and not include e.g. highly technical details.

Furthermore, the aim of this report is not to test the validity of the current business agility theory, nor to pinpoint every single source of agility enablers. Instead we have tried to locate the most important sources for business agility that can be applicable to most industries, and packaged these in a framework that can be used by consultants or managers to know where to focus improvement efforts. By using a combination of the current research on business agility together with interviews of C-level managers we have delimited our framework in an abductive way (see chapter 2.2 for details). It is important to understand that the topics we include in our framework are not to be seen as the only ones affecting business agility (the reality is much more complex!). Thus, this framework should not be seen as a roadmap on how to become 100% agile, but rather as a guide for consultants and managers in what areas to excel at in order to improve organizational agility.

2 Methodology

In this chapter the research strategy and approach is put forward. The different steps of the study are presented, such as primary and secondary data collection, and the creation process of the business agility framework. Reliability, validity and generalizability of the results are also discussed.

2.1 Identification of Paradigm

According to Collis and Hussey (2009, p.56) "positivism is associated with quantitative methods of analysis [...] interpretive research is any type of research where the findings are not derived from the statistical analysis of quantitative data". Furthermore, the authors describe positivism and interpretivism as the two extremities of the paradigm continuum.

In order to get a both valid and reliable final model for business agility we will use both semi-structured interviews to add validity and a quantitative survey that will add reliability to the framework. Although this is in line with the positivistic research paradigm, interviews that will be held might become influenced by our subjectivism (and possibly biased due to our pre-made background research on relevant theories). Furthermore, the consulting firm that have contracted us demands a framework with high reliability and also that results should be able to be generalized, which is in line with positivism according to Collis and Hussey (2009). Anyhow, since our framework will mainly be based on a number of persons subjective opinions, based on their own experience, the approach of this research will be placed closer to the interpretive research paradigm on the continuum between positivism and interpretivism.

2.2 Research Approach

In order to evaluate if theory actually works in reality, Dubois and Gadde (2002) argue that an abductive research approach can be suitable. In such an approach, the researcher jumps between theory and "reality" (represented by interviews and a survey in this study) multiple times to formulate the final framework. This research process has been used to develop several different types of business frameworks (e.g. Holmlund 2008; Storbacka 2011; Wendelin 2011).

First a broad orientation in the business agility theory was conducted, during which a number of main categories within business agility were identified. This preliminary theoretical framework was used to develop a simple theoretical model. Due to the vast amount of theory affecting business agility and the fact that some of it might be context specific, a pilot interview was conducted, during which the theoretical model was evaluated. The focus was to better understand what main theoretical fields to further look into. With this input, a more focused theoretical framework was created, which was used to

develop a hypothesis for a business agility assessment framework. The hypothesis was tested against "reality", represented by C-level managers with which we held semi-structured interviews. After each interview, the findings from it were analyzed against the theoretical framework in order to fine-tune the hypothesis. This process was repeated until a "steady state" (when additional interviews would probably generate limited adjustments) was reached for the business agility assessment framework.

After the interview sessions were completed, a survey was conducted in order to understand which of the main categories in our business agility framework that is seen to be the most important, and also how important all different categories were in relation to each other. The results found was used to assign weights to the different business agility categories in the framework, and also to better be able to analyze business agility and draw conclusions about it. The following steps could describe the whole process:

Interview part

1. Literature review to form preliminary model
2. Interview C-level Manager for new input and ask about (1)
3. Find support in literature for input from (2)
4. Update the model
5. Repeat (2) - (4) until "stationary solution" is obtained

Survey part

1. Formulate survey from literature review and interview sessions
2. Send out the survey to managers
3. Collect data from survey
4. Analyze the data

2.3 Data Collection

In order to not be blinded by theory and be able to develop a generic framework, we have chosen to first perform semi-structured interviews. After all interview sessions were completed, the framework was fine-tuned by using the data obtained through a quantitative survey.

Interviews

The interview sessions started out with a pilot interview with a person who had been active in many different industries, with the aim to orientate us in the empirical world and test the found theories. The first theoretical model (see chapter 3.3), which was created from a preliminary literature review, was found not to be very well aligned with reality, and the interview led to some changes in the framework. These changes were made after a

new, thorough research in the literature had been done. The updated framework was then tested against the same interviewee once again, and more detailed input could be gathered.

In the following study we selected and interviewed C-level managers in different industries. Each interview session was separated into three parts. First of all, we described for the interviewed person what we expected from the interview and gave them a short presentation of the definition of business agility, including some real business examples, in order for them to get an idea of what we wanted them to discuss. We made it clear that we aimed at creating a generic framework consisting of a number of factors/capabilities that enable organizations to be more agile. After the presentation we let them speak freely about their relation to business agility, give examples from their professional experience and if possible bring some ideas on how they would like to formulate a model in order to describe and capture the essence of business agility. This is what Collins and Hussey (2009) refer to as open questions, which are intended for collecting a broad set of exploratory information. Finally, we showed them our latest updated framework and then continued the discussion around how it was composed and what alteration/modifications they would like to propose (if any). The purpose of structuring our interviews this way was to first obtain broad empirical data, then evaluate the theory we have found. By doing this we let the model grow incrementally after each meeting with the professionals.

Survey

The second primary data collection was conducted through an Internet based survey (see appendix 1), formed by the findings from the interview sessions. Its purpose was to give relative weights to the different categories in the business agility framework, and also to make sure that the findings from the interviews were relevant. The survey was formed in line with the Likert scale method, which is one of the most widely used ones for forming scales in surveys (Ejlertsson, 2005). All questions were formed according to the guidelines given by Ejlertsson (2005), who also argues that it is hard to obtain a high response rate for these types of surveys and that it should not include more than 40-50 questions (although this depends on the layout and structure of the questions). A multi-phase pilot study was conducted in order to evaluate the structure of the questions and the response options. In the first part of the pilot study, the survey was evaluated twice by Mikael Julher, who is the CEO of the marketing consultancy firm PMP Marknadskonsult and has lots of experience in how to construct a survey to obtain the best results (Julher 2012a; Julher 2012b). In the second part of the pilot study, the survey was sent to 10 respondents and the gathered answers were evaluated. Making a pilot study for the survey is in line with Ejlertsson's (2005) recommendations.

2.4 Sample Selection

Interviews

In order to get a high strategic perspective of the challenges with being an agile organization, C-level managers were selected to give general input to the business agility framework. A list of 30 possible interviewees, who have been or currently are an executive in a medium or large sized organization, was written down. The persons who had been active in more than one industry were prioritized when trying to set up a meeting. When one meeting was finished, the following person to select from the list should be active in another industry. In table 1 below, the interviewees are listed in alphabetical order.

Table 1. List of interviewees

Name	Organization	Industry	Position
Peter Elving	Segulah Advisor AB	Private equity	Industrial partner
	Almony	Food & beverage	Board member
	Medstop	Pharmaceuticals	Board member
	GS1 Sweden AB	Supply chain	Board member
	Kraft Foods Nordic A/S	Food & beverage	CEO
Kari Forsén	Steria AB	IT	CEO
	Accenture Technology Solutions	Management consultancy	CEO
Staffan Junel*	Micronic Laser System AB	Nanotech	CEO
	Victor Hasselblad AB	Photographic equipment	CEO
	Åkerlund & Rausing AB	Packaging	CEO
	Tarkett AB	Floor manufacturing	Division manager
	Ericsson	Telecom	VP
Anders Rolf	Forex Bank	Banking	CIO
	Nordea	Banking	Country manager
	SEB	Banking	IT manager
Hans Stråberg	Investor	Industrial holding	Board member
	Electrolux AB	Household appliances	CEO
Peder Zetterberg	Northland Resources	Mining	CFO
	BRIO AB	Consumer goods	CEO
	Sveaskog	Paper & forest	CFO
	Capgemini Nordic	IT	CIO

*Two separate interviews were held with Staffan Junel.

For the pilot interview, we focused on finding a person with much knowledge from leading positions in organizations in different types of industries. Staffan Junel matched this profile well. Furthermore, he was appointed CEO of Victor Hasselblad AB to manage the technological transition from analog to digital photography, and has hands on experience from trying to adapt an organization to changes in the business environment.

Survey
The quantitative survey was sent out to approximately 130 managers, at different levels, in 28 organizations within a 100 kilometers radius of Stockholm, Sweden. These 28 organizations had been selected by the consultancy firm in 2011, based on being the most successful companies in the region when looking at highest increase in turnover and/or increase in staff during the past three years (2008-2010), and had to have at least 100 employees (medium and large sized organizations).

2.5 Justification for Choice of Methodology and Methods

One of the main aspects of importance in this research was to provide the analytical tool with general inputs that could be applicable to most of the consultancy firm's customers, and since their customer base is spread among several different industries, the research methodology has to enable for inputs to be gathered cross-sectional between industries. According to Collis and Hussey (2009) a cross-sectional research method is appropriate to obtain data in different contexts, e.g. to ascertain similarities and differences between different types of industries. Furthermore, Collis and Hussey (2009) also stated that a survey methodology could be used to generalize results to a population. Our research methodology is using both of these two types.

We have used methodological triangulation to reduce the method bias when analyzing the data (Collins & Hussey, 2009). The interviews performed early in the study were exploratory and gave insights of the key issues of business agility, which was then evaluated through the quantitative survey in order to give more depth to the model. The reason for choosing a triangulation method is to receive greater validity and reliability than possible by using an approach with one single method (Collins & Hussey, 2009).

The clients in focal point for the business agility assessment tool are planned to be C-level managers, and should thus focus on a high strategic level, not pinpointing e.g. too technical details. Hence, it is important that they are comfortable with the scope and language of the results presented by the tool. The reasons for choosing only to focus our interviews on C-level managers was thereby primarily due to their strategic experience and also to align the theory on business agility with the language and strategic areas of interest of C-level managers. It is important to understand that the interviews are not used to gain knowledge in what business agility is per se, but are instead focused on finding out what actions persons in managerial positions find relevant, thus narrowing down the extensive business agility literature to concentrate on. Conducting interviews with employees at all different levels in many different industries would be (although probably improving the validity of the framework) too time consuming, and might also add categories that are too detailed to discuss with C-level managers during assessments.

It is also important to understand that a business agility assessment tool built on this framework should be used to illuminate general areas of possible improvement. A more detailed assessment/investigation of the areas that are reported weak by the tool should be performed to get a more detailed picture of the areas for improvement. Such a thorough investigation would require interviews with additional persons and might also include other types of observations in order to capture a more nuanced picture of the problem areas.

2.6 Limitation of the Research Design

Although the use of methodological triangulation can improve the validity and reliability, there are however some limitations to the use of it. Methodological triangulation is time-consuming, and the results are often hard to replicate (Collins & Hussey, 2009). Since we only have 20 weeks to perform this study, we have tried to limit the scope of it, enabling us to still use methodological triangulation to gain all of the advantages of this method.

The selected firms for our survey will not represent the total population, and it is important to understand that this is not our purpose. The 28 chosen companies are the most successful medium and large sized organizations in the larger Stockholm region. Thus, our framework tries to capture what successful medium and large sized organizations in Sweden argue is important for being agile. Furthermore, by delimiting our empirical study to only include organizations in Sweden, the factors in this framework might not be relevant outside Sweden. We are well aware of this issue and argue that this is rather a strength in this case due to the fact that the business agility assessment tool that this report will provide the foundation for will initially only be used in the Swedish market.

One limitation in our study is that we only use C-level managers in the interview sessions to abductively form our model. Since the results from the agility assessment tool will serve as a discussion platform used to interact with C-level managers of potential customers, it is important that it is focusing on a high strategic level. Thus, this approach has been necessary in order to develop a framework that will be useful for the consultancy firm. In order to mitigate the biased result due to this limitation, we have used the latest research on the subject to complement the findings from the interviews. We have also distributed a survey on the importance of each subject in the framework to managers at different levels (also including C-level managers) in different organizations, with the possibility to add comments on e.g. additional factors that should be included.

According to Dubois and Gadde (2002), there is a risk of being blinded by the theoretical framework being tested in the empirical world when performing abductive research. To mitigate this limitation we used semi-structured interviews in which the interviewees were first encouraged to talk freely about business agility enablers, and first later on in the

interview use the theoretical framework as a discussion platform. This allowed us to first collect input not biased by the framework. In order to enhance the validity of the interview sessions, the finalized findings were sent back to the respondents so that they could give their approval or give instructions of changes.

3 Broad Orientation in Business Agility Theory

Due to the huge amount of theory that affects an organizations business agility, and the fact that we have chosen an abductive research method to be able to manage the research problem during our given time constraints, we first conducted a broad orientation in the business agility theory, which is put forward in this chapter. The model based on this theoretical orientation was used in the following pilot interview to gain a better understanding in what main theoretical fields to focus on in the theoretical framework.

3.1 Business Agility

The business agility concept was initially put forward by researchers at the Iacocca Institute, Lehigh University, in 1991, with a focus on the manufacturing process (Aaen et al. 2005; Ganguly et al. 2009; Yauch 2011), and it was built on the concepts of both lean manufacturing and flexible manufacturing. According to Conboy et al. (2005, p.43), "agility requires waste to be eliminated, but *only to the extent where its ability to respond to change is not hindered*. This does not remove the need to be economical, only lower its priority". This view is also supported by Ganugly et al. (2009), who in their large review on business agility research say that lean concepts fits predictable environments where the variety requirements are low, while agile concepts are necessary when there are volatile demand patterns. Furthermore, they present a number of definitions of business agility given by different researchers, and also try to capture the essential characteristics within those definitions. These are presented in table 2 below.

Table 2. Definitions of agility (cited in its whole from Ganguly et al. 2009, p.412)

Reference	Definition	Speed /time	Cost	Responsiveness	Flexibility	Quality	Customer needs
Iacocca/ Leigh (1991)	A system that shifts quickly among product models/lines, ideally in real time in order to respond to customer needs	X		X	X		X
Goldman et al. (1995)	Capability of an organization to operate profitability in an competitive environment comprised of continually changing customer habits			X	X		X
Kumar and Motwani (1995)	Ability to accelerate the activities on critical path and… time-based competitiveness	X		X			X
Cho et al. (1996)	Capability to survive and prosper in a competitive environment or continuous and unpredictable changes by reacting quickly and effectively to changing markets, designed by customer designed products and services	X		X			X

Fliedner and Vokurka (1997)	Ability to market successfully low-cost, high quality products with short lead times and in varying volumes that provide enhanced value to customers through customization	X	X			X	X
Yusuf et al. (1999)	A successful exploration of competitive bases (speed, flexibility, innovation, proactivity, quality and profitability) through the integration of reconfigurable resources and knowledge management to provide customer driven products and services in a fast changing market environment	X	X	X	X	X	X
Dove (1999, 2001)	Ability of an organization to respond efficiently and effectively to both proactive and reactive needs and opportunities on the ace of an unpredictable and uncertain environment	X	X	X	X	X	X
Menor et al. (2001)	"The ability of a firm to excel simultaneously on operations capabilities of quality, delivery, flexibility and cost in a coordinated fashion"	X	X		X	X	
Sambamurthy et al. (2003)	Ability of a firm to redesign their existing processes rapidly and create new processes in a timely fashion in order to be able to take advantage and thrive of the unpredictable and highly dynamic market conditions	X		X	X		X
Gartner Research Group (Ashrafi et al., 2005)	"An organization's ability to sense environmental changes and respond effectively and efficiently to that change"	X		X	X		X
Raschke and David (2005)	"Ability of a firm to dynamically modify and/or reconfigure individual business processes to accommodate required and potential needs of the firm"	X		X	X		X
Mathiyakalan et al. (2005)	"Ability of an organization to detect changes (which can be opportunities or threats or a combination of both) in its business environment and hence providing focused and rapid response to its customers and stakeholders by reconfiguring its resources, processes and strategies"	X		X			X

3.2 Factors Affecting Business Agility

Core competence

In a review of the research on business agility (with a focus not only on agile manufacturing, but also on factors relevant to most types of enterprises), Sherehiy et al.

(2005) summarizes important factors that make an organization agile. According to the authors, the focus and mobilization of core competences is one of them. Yusuf et al. (1999) suggest that companies should develop a map of core skills, which will be helpful when they need rapid changes of their business. Tseng and Lin (2011) discuss the importance for an agile organization to develop a responsive supply chain, and only focus on its core business. This is also supported by Lin et al. (2006), Piercy (2009), and Yauch (2011).

Organizational structure

Sherehiy et al. (2005), Vinodh et al. (2010), and Tseng and Lin (2011) all agree on that organizations operating in unstable, changing and unpredictable environments tend to have less hierarchical and formal structures to achieve the needed agility. This results in that reconfiguration of physical and human resources can occur more quickly (Sherehiy et al. 2005). Furthermore, Vinodh et al. (2010) also mentions that the organizational structure should be formed to allow information to flow smoothly through the entire organization. Devadasan et al. (2005) underline that business agility needs a flattened and team managed organizational structure. According to Piercy (2009), an agile organization needs a more loose and integrated structure, not only internally but also with external entities.

IT

The research we have found agrees on that efficient IT-systems are vital to reach business agility (e.g. Verstraete 2004; Devadasan et al. 2005; Overby et al. 2005; Pries-Heje 2006; Sherehiy et al. 2007; Vinodh et al. 2010; Tseng and Lin 2011). According to Overby et al. (2005), the volume of the information flow in today's global and competitive environment is too high and the information is too complex for us humans to process quickly enough without IT support. Verstraete (2004) claims that companies that have achieved business agility have effectively integrated business and IT, implying the importance of strategic business teams to work closely with IT-management teams. This is also supported by Mathiassen and Pries-Heje (2006). IT-systems should be used for achieving agility in supply chains (which includes the observation of changing dynamics of customers), R&D, manufacturing and many other business processes, and these systems often need frequent modifications and enhancements (Overby et al. 2005; Lin et al. 2006 Vinodh et al. 2010). One special type of IT-system that often is mentioned as helping the organization in sensing the changes in the environment is a Knowledge Management System, which improves organizational knowledge sharing and innovation (Overby et al. 2005; Sherehiy et al. 2007). IT can also help organizations to monitor changes in the economy, regulations and laws etc., both locally and globally (Overby et al. 2005). One important finding is that much of the research is not focusing on that IT-systems can limit the business agility if they are implemented badly or not continually modified (Overby et al. 2005). This is supported by Yauch (2011) who states that business agility requires agile IT-systems.

Collaboration

Collaboration has been identified by several previous authors (e.g. Jackson and Johansson, 2003; Lin et al., 2006; Vinodh et al. 2010; Tseng and Lin, 2011) to be of great importance for the organization to become agile. This term has been put in both internal and external context to address the need for a collaborative workforce, as well as a collaborative supply chain. Vinodh et al. (2010) argue that strong employee collaboration together with involvement and co-operation with suppliers enhance speed of product development and responsiveness to changes in customer's needs. Lin et al. (2006) also support this and state the importance of trust-based relationships and collaborations with customers/ suppliers in order to create an agile supply chain.

Culture of change

According to many authors (e.g. Dove 2005; Sherehiy et al. 2007; Tseng and Lin 2011; Yauch 2011), a culture of change is one of the cornerstones in an organization that seeks agility. The corporate culture should be aligned with the organizational strategy, and this culture of change proficiency has to be fostered, nurtured and developed continually in the organization (Dove 2005; Sherehiy et al. 2007). Dyer and Shafer (2003) underline the importance of having a culture of employee empowerment in an agile organization. In their review of business agility literature, Sherehiy et al. (2007, p.457) summarize the findings on a culture of change as following: "The term 'culture of change' is a description of an environment supportive of experimentation, learning, and innovation and is focused on a continuous monitoring environment to identify changes. Culture of change is an environment where people on all organizational levels have positive and fearless attitude to changes, different opinions, new ideas, and technology". According to Piercy (2009), for agile organizations it is also important to build a culture that encourages collaboration (internally and externally).

Streamlined operations

According to Lin et al. (2006) any company aiming at being agile need to align with suppliers and customers, creating something called an agile supply chain (ASC). This involves streamlining the firms' operations, which also is supported by Verstraete (2004). Linking suppliers, designers, manufacturers and distribution centers via downstream flow of material and upstream flow of information can enhance all parties' adaptability and flexibility to cope with changing markets quickly and effectively (Lin et al. 2010). Sherehiy et al. (2007) state that training of the work force is vital if an organization wants to keep the operations agile. Furthermore, the authors also underline the importance of modularity in agile operations.

3.3 Theoretical Model

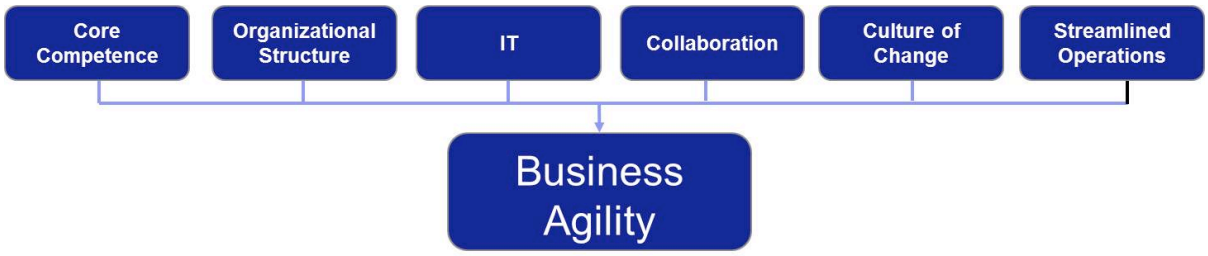

Figure 1. Theoretical model.

The six main categories presented in chapter 3.2 are illustrated in the simple model above (figure 1). This model was used as a discussion platform during the following pilot interview.

4 Pilot Interview

In this chapter the main findings from the pilot interview is put forward and discussed. The focus of the interview was to gain a better understanding of the complexness with business agility, and what factors that usually are present in different types of industries. This helped us to better focus the following literature review.

4.1 Main Findings

Although Staffan Junel, who has a background as CEO in many large organizations within different industries, thought that our main categories in the theoretical model (see chapter 3.3) seemed to be relevant, the most important finding from the pilot interview was that our model had too much focus on internal factors. According to him, it is vital to focus on external aspects such as customer flexibility (e.g. continually trying to understand customer needs, or innovation regarding distribution channels and marketing), which can be seen as a driver of agility. He argued that organizations that are good at being agile have leaders that are able to "look around corners", and to be able to do this they need, in addition to lots of experience, support from external intelligence. Furthermore, although Staffan Junel pointed out a focus on core competence as an important issue, he argued that it should be an underlying part of the category streamlined operations in the theoretical model (or perhaps even be included as subsets in other categories such as collaboration with external parts, or outsourcing of none-core business IT).

Staffan Junel also argued that large IT-systems are not especially flexible in general, and said as an example that many organizations have large enterprise resource planning (ERP) systems that are expensive and time consuming to make small adjustments in. He said that "IT often limits the organization but still is necessary for it to work", and in the strive for being agile "the aim should be to minimize the problems IT generate, and to find areas where IT can speed up processes". Furthermore, Staffan Junel argued that it is important for an organization striving for agility to focus on innovation. What type of innovation depends on the type of organization, and can for example be innovation connected to distribution, technology, or marketing. Junel also thought that it might be interesting to include sustainable development and related issues, and argued that this is becoming a vital topic for organizations if they are to survive in a long-term perspective.

Finally, he also underlined the problematic with creating a generic business agility tool, and argued that there are so many contextual factors that affect agility. As an example he said that operations look very different in different types of organizations. How to achieve streamlined operations will differ from one type of organization to another. Furthermore, if looking at too highly strategic factors that are present in most types of organizations, it is easy to miss important factors that are more industry related. (Junel, 2012a)

4.2 Discussion

From our interview with Staffan Junel we found that there was a need to further investigate the literature regarding external factors affecting business agility and if this should be included in the theoretical framework that will serve as a base for creating a business agility assessment framework. We have also come to the conclusion that streamlined operations, although important for being agile, might be hard to include in a generic framework since it will depend on many contextual aspects. Much of the theory we have found on streamlined operations have come from the agile manufacturing literature. The important parts that are more generic could perhaps instead be grouped together under other categories. As an example, we wrote that Sherehiy et al. (2007) state that training of the work force is vital if an organization wants to keep the operations agile. Since knowledge increasing initiatives is not specific for manufacturing industries, it can still be further investigated in the literature as an area that can enable operation agility in most types of organizations. Furthermore, we have found in the theory on agile manufacturing that aligning with suppliers, customers and competitors is important. By lifting this out of the manufacturing context, it can instead be seen as an external collaboration, and will be further investigated in the literature as an enabler for business agility that is applicable to most type of industries.

5 Theoretical Framework

In this chapter all findings in the current business agility research, suited for our research and delimitations, are presented.

5.1 Business Agility

In a McKinsey Quarterly global survey from 2006, an organization's agility is defined as "its ability to change tactics or direction quickly – that is, to anticipate, adapt to, and react decisively to events in the business environment" (The McKinsey Quarterly, 2006). As mentioned earlier, researchers argue that it is important to not cut cost to the extent that it hinders the organizations ability to adapt quickly. Hugos (2009), who have written books on business performance that are used by universities worldwide, such as École supérieure des sciences économiques et commerciales (ESSEC) Business School, the University of California Los Angeles (UCLA), and Leipzig Graduate school of Management (HHL), also supports this view of the importance of not entirely focusing on cost-efficiency. He argues that, when striving for the ultimate efficiency in operations by cutting staff and other costs, there is no reserve and flex with which to respond to unforeseen change, and by doing so opportunities to grow the business will be lost. "Companies must attain and maintain a level of 'good-enough' efficiency, but unless a company is the low-cost leader in its market, it cannot use efficiency alone to generate profits. For the most part, it is now customer responsiveness that generates profits. [...] There are far more ways to use responsiveness to attract customers than there are ways to use efficiency and low price" (Hugos 2009, p.3).

Backhouse and Burn (cited in Phillips and Wright 2009, p.1072) defines the difference between agility and flexibility by saying that agility is "the ability of the enterprise to adapt to external changes in the external environment. Whereas, flexibility is the ability of companies to respond to a variety of customer requirements which exist within parameters". This is also supported by Lu and Ramamurthy (2011, p.933), who say that agility "extends the notion of flexibility that can usually be engineered into an organization's processes and IT systems to address changes that are largely predictable with a predetermined response". Tseng and Lin (2011) claims that for a firm to reach maximized value and meet competitive threats effectively, the organizational agility strategy has to be based on all aspects of the business. Solely looking at business divisions as islands within the company will hamper the agility according to the authors. Thus, for business agility to become a successful organizational strategy that can create the intended competitive advantages, agility providers have to effectively be ensured to satisfy agility capabilities among all departments of the enterprise.

Some researchers have actually tried to simplify the definition of business agility by using a formula. E.g., Dove (1999), as cited by Ganguly et al. (2009, p.411), talks about the

importance of knowledge management and states the formula "Agility = Response ability + Knowledge Management", while many other researchers instead argues that agility is depending on speed and flexibility; "Agility = Flexibility + Speed" (Ganguly et al. 2009, p.413).

Many researchers argue that innovativeness should permeate every part of an organization striving to be agile (Crocitto and Youssef 2003; Sherehiy et al. 2007). Large corporations must innovate in order to find new businesses for themselves so that their portfolio is in line with the changing consumer preferences, demand in emerging markets and other global trends (Becker et al., 2006). Innovation management is increasingly being linked to the foresight process performed by companies (Von der Gracht et al., 2010).

5.1.1 Corporate Foresight

"An executives' ability to read trends accurately in a rapidly changing business environment can make all the difference between riding the currents of opportunities and paddling upstream against them" (Becker et al. 2006, p.17). The term corporate foresight is widely used by companies for their efforts in analyzing changes in business environments, markets, and new technologies, and how these changes affect the corporate strategies and innovation (Von der Gracht et al., 2010). Ratcliffe (2006) and Hines (2006), as cited by Von der Gracht et al. (2010), argue that corporate foresight is one of the main secrets to success for any organization. This is also supported by Becker et al. (2006), who say that by shifting the corporate portfolio in order to align it with global trends, organizations are much more likely to achieve strong growth and profits. Furthermore, they argue that although some companies manage to quickly spot changes in global trends, they might fail in the analysis of what implications that those trends create. Managers should thus not view the large trends in isolation. According to Becker et al. (2006), behind every larger trend there is a multitude of sub-trends that interact with each other to affect not only the most obvious industries but also many others. This implies that managers must learn to fully understand the range of sub-trends behind every large trend, and in what ways the sub-trends interact with a variety of industries. Another interesting finding is connected to Tidd and Bessant's (2009) discussion on issues regarding forecasting the future. They argue that it is often that the forecasting process is more valuable in itself than the actual output from it, and that it is a locus of business innovation for everyone involved in it.

In a large study published in MIT Sloan Management Review by Weill et al. (2002), they give an example of an organization that successfully sends out IT-specialist to travel the world looking for new technologies. In a Harvard Business Review, Sull (2010a) states that it is important to have sophisticated IT systems to collect and analyze data continually in order to not miss market shifts, but he also argues that they need to be supported by direct observation. Sull (2010a) gives the example of the Spanish retailer Zara, whose IT systems

showed that sales from a new fashion collection did not take off, and therefore sent marketing managers to their different stores to analyze why. They found that the new collection was a bit slimmer that their traditional ones and that the women could not fit into their usual size. The collection was then relabeled, after which the sales boomed.

In an article by Arteta and Giachetti (2004), they list a number of change drivers that different researchers have stated to be important for organizations to be aware of. E.g. they refer to St. John et al. (2001) who lists change in technology, globalization of markets and business competition, and global wage and job skill shifts as some of the most important once. Furthermore, they cite Levary (1992) regarding important external changes in competition, customer taste, and economic environment. Similar change drivers are listed by Tseng and Lin (2011) in their study on business agility. They summarize research from e.g. Sharifi and Zhang (1999), Yusuf et al. (1999), and Sherehiy et al. (2007), and list the following five business agility drivers:

- **Market**
  Market volatility from growth in the market that results in increasing the introduction of new products and product life.

- **Competition**
  Increase competition caused by a fast changing market, international competition, Internet usage, increasing costs and shorter production time for new products.

- **Customer requirements**
  Changing customer requirements caused by customization, quicker delivery time and increased customer expectations about quality.

- **Technological innovations**
  Technological innovations caused by new production facilities and integration of systems.

- **Social factors**
  Change in social factors for environmental protection purposes, workforce/workplace expectations and from legislation.

According to Tseng and Lin (2011), these factors are the most important agility drivers that change the competition in business environments. These sources of change are also supported by Sambamurthy et al. (2003), and Conboy et al. (2005).

5.1.2 Internal & External Collaboration

Just as stated earlier, both internal and external collaboration have been identified by several researchers (e.g. Jackson and Johansson 2003; Lin et al. 2006; Vinodh et al. 2010; Tseng and Lin 2011) to be of great importance for an organization in order to become more agile. Sharifi and Zhang (1999) and Jackson and Johansson (2003), both cited in Sherehiy et al. (2007), also argues that internal and external collaboration is an important agility capability.

Weill et al. (2002) argue that it is vital that there is an internal collaboration between the heads of business units and IT professionals in order to avoid having incompatible IT systems, which will lead to e.g. delays and limited sharing of information, resources and expertise by business units. They argue that by collaborating on how to develop the right IT infrastructure, the organization will have faster time to market, higher growth rates and more sales from new products. Yusuf et al. (1999) state that by focusing on internal collaboration through the use of cross-functional teams, organization agility will be improved. This is also supported by Hugos (2009, p.40), who gives the following example: "When customer service people start working together more effectively with salespeople, and salespeople start working more effectively with operations people, and information technology people start working more effectively with everybody, then amazing things happen". Sull (2009, p.22) supports the importance of internal collaboration and gives the example an organization that achieved improved agility through an extensive effort on internal collaboration between different managers, which made the managers swap "insights on the changing business landscape and ideas for new ways to seize market share or improve efficiency".

In a distributed manufacturing environment, Gunasekaran (1998) argues that it is important to develop cooperatively supported work processes through the use of partnerships or teams. The author says that this can be done through alignment of manufacturing, business and operational strategies. Yusuf et al. (1999) also argue that having partnerships is important for the agility level of an organization. They give the following attributes of an agile organization related to partnerships:

- Rapid partnership formation
- Strategic relationships with customers
- Close relationship with suppliers
- Trust-based relationship with customers

Furthermore, Gunasekaran (1998) also states that, in partnerships, it is important to have developed control systems for the management team, to use advanced information technology, and to embrace new management concepts.

5.1.3 Culture of Change

Having a culture of change is identified by many researchers to be highly important when striving for agility (e.g. Pascale 1997; Crocitto and Youssef 2003; Dove 2005; Sherehiy et al. 2007; Tseng and Lin 2011; Yauch 2011). Just as mentioned earlier, Sherehiy et al. (2007, p.457) stated that "the term 'culture of change' is a description of an environment supportive of experimentation, learning, and innovation and is focused on a continuous monitoring environment to identify changes. Culture of change is an environment where people on all organizational levels have positive and fearless attitude to changes, different opinions, new ideas, and technology". The same authors argue that clearly communicated information regarding the organization and its need for adapting to changes; working with continuous improvement; incentives promoting teamwork; employee training; and diversity are recurring as important factors in the research on business agility. In today's volatile business situation it is important to have an environment that is positive towards changes, new ideas, people, and technology, and in order to achieve this it is important that the employees understand why change is needed (Sherehiy et al. 2007; Dessler 2009). This is also supported by Hugos (2009) and Sull (2010a), who both states that it is necessary that everyone in the organization understand what creates value for the company, and why change is an important factor in the value creation process. In a global survey by the McKinsey Quarterly in June 2006 (The McKinsey Quarterly, 2006), employees lacking sense of purpose, commitment, and motivation was found to be the most important barrier to overcome within the company culture when striving for agility. The importance of diversity is also supported by Dessler (2009), who states that workforce diversity broadens the knowledge base and skills within the organization, which he argues are important components of being successful at dealing with organizational change.

In a Harvard Business Review, Sull (2010a) argues that the most agile organizations he has studied have incentives, promoting both individual achievements and teamwork, for the employees. The importance of having incentives to promote learning and collaboration is also supported by Crocitto and Youssef (2003), Dessler (2009) and Piercy (2009). Nevertheless, Dessler (2009) also argues that incentive systems are complicated and can sometimes harm efficiency if not carefully developed. The author says that for incentives to work properly, they must have a clear alignment to the employee's goals. Furthermore, Hugos (2009) states that the responsive organization creates value through constantly adjusting to evolving customer needs and changing economic circumstances, which requires everyone within the organization to be involved in the process of continuous improvement. To be able to obtain this environment, in which everyone works with continuous improvement and change, he argues that the workers has to be trained and rewarded in some way. This is also supported by Sambamurthy et al. (2003), who argue that operational agility requires a culture that promotes continuous quality enhancement, and a willingness to share strategic information across the partnership network. According

to Hugos (2009, p.12), "a responsive organization constantly makes many small adjustments to better respond to its changing environment", and compares the effect of such continuous adjustments to the effect of compound interest over time. The importance of continuous improvement to enhance agility is also supported by Pascale et al. (1997), Crocitto and Youssef (2003), and Sherehiy et al. (2007).

Sull (2010a) says that to be able to increase agility it is extremely important to make knowledge-enhancing investments, which both improves the knowledge base within the organization and helps to attract the best new employees. Hugos (2009, p.13) also supports this and states that "responsiveness depends on experience, and it depends on higher levels of training and skills, and it continually increases the value of existing products and services as well as creates new ones". Hugos (2009) simplifies the correlation between business responsiveness and training through the formula,

$$Business\ Responsiveness = (Visibility + Motivation) * Training)$$

With visibility he means that everyone in the organization should receive timely and accurate data regarding the effect of their efforts. Motivation is what drives people to decide on something and then act on it, and he argues that this is the heart of responsiveness. Educating the staff "is the most powerful leverage factor" (Hugos 2009, p.94). Sherehiy et al. (2009) argues that job rotation and training are vital for obtaining a knowledgeable and multi skilled staff, which helps the organization to become more agile. Training should also comprise the organizations IT (Weill et al. 2002; Crocitto and Youssef 2003). According to Weill et al. (2002), educating the staff, including managers, in IT capabilities is often neglected. They found in their large study on how IT can enable agility, that organizations spending a higher percentage of their budgets than industry average on IT education had superior business process performance and lower total costs per workstation. Pascale et al. (1997) also supports the importance that the culture has on organizations agility, and that it is vital to communicate the vision, and need for change to every single employee, and also give them the proper training to handle such change. When analyzing the agility of a number of organizations, Pascale et al. (1997, p.128) said, "the 800-pound gorilla that impaired performance and stifled change was culture".

5.1.4 IT

As stated previously, IT is argued by many researcher to be vital for enabling business agility (e.g. Cross 1995; Verstraete 2004; Devadasan et al. 2005; Overby et al. 2005; Pries-Heje 2006; Sherehiy et al. 2007; Vinodh et al. 2010; Tseng and Lin 2011), and just as stated earlier, training the staff in the capabilities that IT enables is important, and will speed up processes, making the organization more agile (Weill et al., 2002).

Hugos (2009) argues that usually 80 to 90 percent of a business is routine operations, and it is only these that should be standardized and automated. "Whenever there are people doing routine data entry or repetitious work of any sort, this is an opportunity to automate" (Hugos 2009, p.32). Furthermore, he says that creating complex systems will often be expensive and limit the ability to adjust the systems to fit changing requirements. This is also supported by Weill et al. (2002, p.58), who argue, "The average enterprise spends more than 4.2% of revenues annually on information technology. Overall, those investments account for more than 50% of the total capital budget. [...] About 55% of the IT budget goes toward the complex fusion of technology, processes and human assets that comprises infrastructure".

In a MIT Sloan Management Review, Weill et al. (2002) argues that there are few more critical choices that senior executives make than deciding on which IT investments that should support the business and increase its agility. They argue that investments are often made by different business units independently, and that "these independent investments are often of a short-term, catch-up or bleeding-edge in nature, and the resulting technologies are often incompatible. This is also supported by Verstraete (2004) and Mathiassen and Pries-Heje (2006), who argues that companies need to effectively integrated business and IT to obtain agility, implying the importance of strategic business teams to work closely with IT-management teams. Furthermore, Weill et al. (2002) says that overinvesting in infrastructure leads to wasted resources. Underinvesting (or worse, implementing the wrong infrastructure) translates into delays, rushed implementations, islands of automation and limited sharing of resources, information and expertise by business units" (Weill et al. 2002, p.57). The authors also states that it is important not to have a short-term focus when looking at IT investments, and managers need to understand that investments involves a trade-off between profit today and profit tomorrow.

Sambamurthy et al. (2003) argues that IT enables agility through for example external collaboration platforms, supply chain systems, and customer relationship management systems, which enables rapid and up-to-date information flow between buyers, sellers, partners, and competitors. This is also supported by Sull (2009), who states that detailed and reliable real-time data sharing within an organization is a "must-have". Furthermore, Sambamurthy et al. (2003) argues that internal collaboration platforms and other internal information sharing systems enables knowledge creation and sharing, which is an important part of improving business agility. In addition, Sambamurthy et al. (2003) also says that IT should be used as an important part of the corporate foresight process to collect business environment data. These different IT tools for internal and external information sharing helps organizations take faster and more informed decisions, and the decision process should also have support from business intelligence systems to improve it even further (Sambamurthy et al. 2003; Overby et al. 2005). This is supported by Weill et

al. (2002), who also argues that by using standardized systems, it will be easier to link independently developed systems, which is important both for internal and external integration. When Weill et al. (2002) studied 180 top performing organizations in different industries they found that these companies tended to not make a few large IT-investments, but instead many incremental modular investments gradually, and was always trying to standardize, which made it easier to add new modules. Furthermore, they argue that these modules should preferably be look upon as service packets. As an example they say that "IT infrastructure is, of course, not simply a compact disc in a yellow box marked Norton Antivirus or even a comprehensive SAP billing program, but a collection of reliable, centrally coordinated services budgeted by senior managers and comprising both technical and human capability" (Weill et al. 2002, p.59).

The use of IT for information sharing and decision-making is, according to Chopra and Meindl (2010), vital for a supply chain to work swiftly and profitably, since information is a key driver in the supply chain. This is also supported by White et al. (2005), Hugos (2009), and Lu and Ramamurthy (2011). Hugos (2009) argues that for a manufacturing organization, it is important to use a continually updated end-to-end IT system in the supply chain, in order to be able to monitor the products regarding inventory and demand forecast. All information should be visible at all times by everyone in the supply chain to enable supply chain agility. Although White et al. (2005) argues that the use of the right information systems is a key enabler of supply chain agility, there are some challenges with the integration of these systems between different organizations. They say that "an important part of the agility paradigm is the ability to form deeply integrated links with a wide range of trading partners and be able to quickly dissolve these and reform such deep linkages with new partners as required by changing market conditions" (White et al. 2005, p.397), and standardizing is necessary for allowing an easy integration. According to White et al. (2005), the greater the degree of integration between the information systems of trading parties are, the greater the degree of collaboration and coordination will be. They suggest therefor that organizations should invest time and resources in making integration easy, either through using commonly used open standards or by having one party making their system available to others. One other option that White et al. (2005) discuss and advise against is that two parties jointly own an IT system. Although it allows a great integration between the two organizations, they argue that such a relationship creates an unwillingness to change partner even if it would be suitable, thus reducing the flexibility. Furthermore, Weill et al. (2002) argues that both business-to-business and business-to-customer initiatives, although usually differing a lot regarding number of customers and their buying behavior, has the same significant use of collecting external information from their customers (and of course the business market in general).

5.1.5 Organizational Factors

Just as stated in our broad literature orientation, Sherehiy et al. (2005), Vinodh et al. (2010), and Tseng and Lin (2011) all agree on that organizations operating in unstable, changing and unpredictable environments tend to have less hierarchical and formal structures to achieve the needed agility. This results in that reconfiguration of physical and human resources can occur more quickly (Sherehiy et al. 2005). Furthermore, Vinodh et al. (2010) also mentions that the organizational structure should be formed to allow information to flow smoothly through the entire organization. Devadasan et al. (2005) underlines that business agility needs a flattened and team managed organizational structure. According to Piercy (2009), an agile organization needs a more loose and integrated structure, not only internally but also with external entities.

Hugos (2009) argues that an agile organization needs to have a decentralized business model in order to speed up decisions and to get the decision-making closer to the customers. When building the organization as a pyramid, where all decisions has to run by the executives at the top, this creates a bottleneck according to Hugos (2009). "People at the top of the pyramids are too far removed from the scene of the action, and it takes too long for them to understand what is happening and to make good decisions. People in this position inevitably find themselves becoming bottlenecks because there are too many decisions requiring their input and they cannot keep up with the pace of events" (Hugos 2009, p.36). Instead of having this pyramid structure, Hugos (2009) argues that organizations should focus more on coordination and less on control.

General George S. Patton once said: "Don't tell people how to do things, tell them what to do and let them surprise you with their results", and "If you tell people where to go, but not how to get there, you'll be amazed at the results" (Hugos 2009, p.62). This implies that lowering formalization (e.g. strict rules and procedures) and delegating authority will have positive effect on innovativeness. This "military strategy" has been adopted successfully by managers and been the focus of many scholars according to Hugos (2009).

In an American Management Association initiated book on business agility by Grantham et al. (2007, p.31) (course literature at e.g. Cornell University), the author's states that "reducing fixed operating cost in order to increase corporate agility is the central business challenge of the twenty-first century". Furthermore, they argue that since the global economy is more dynamic now than ever organizations must evolve from a fixed cost business model into a variable cost model to be able to respond quickly and be competitive when the conditions change. According to Grantham et al. (2007), cutting cost is the first thing on the list in order to become agile. They argue that by having low fixed operating costs, the resources needed to be thrown in are available when the market changes. "It´s a little like losing weight in order to improve your racquetball game" (Grantham et al. 2007,

p.32). The importance of lowering fixed costs in order to improve business agility is also supported by Sull (2009).

In a summary of literature on how organizational design affects a firms performance and competitive advantage, Pertusa-Ortega et al. (2010, p.312) cites Fredrickson (1986) who defines formalization as "the degree to which formal rules, standard policies, and procedures govern decisions and working relationships". In the same article, Von Krogh (1998) is cited to argue that formalization is restricting the creation and use of knowledge since it hinders the members of the organization in their communication and interaction. Contradictory, Kern (2006), as cited by Pertusa-Ortega et al. (2010), states that some researchers see formalization as a source knowledge enhancer. Okhuysen and Eisenhardt (2002) (also cited in Pertusa-Ortega et al. 2010) draws the conclusion regarding the contradictions that more knowledge is created without rules, but members of an organization will have problems in the integration and use of new knowledge without a formalized structure.

In an article by Arteta and Giachetti (2004) it is stated that the business agility level of an organization has an inverse relation to the complexity of the organization. Robbin (1995) and Fredrickson (1986), as cited in Pertusa-Ortega et al. (2010), states that the level of complexity in organizations is related to the degree of differentiation within it. Furthermore, they state that the complexity of an organization does not exclusively come from the size of the entire organizational system; it also comes from the relationship between the different organizational components. A more complex system have more relationships, sub-systems and non-linear relations that makes it harder to evaluate since it holds large quantities of information (Pertusa-Ortega et al., 2010). The authors argue that the evolving performance of the organization is hard to predict from studying one component, and that complexity hinders the ability of an organization to react to changes when there is a need for making adjustments in the set up the organizational structure, products or processes. As cited by Arteta and Giachetti (2004, p.496), Dove (2001) states, "an obvious way to reduce the toll of transition is to reduce the quantity and complexity of things in transition". According to Arteta and Giachetti (2004) the level of complexity of an organization can even be used to measure the agility of it.

Much of the organizational factors presented above are also supported in a June 2006 McKinsey Quarterly global survey, where overly centralized, slow, or complex decision-making/approval processes was found to be the highest organizational barrier to overcome in order to increase agility and speed (The McKinsey Quarterly, 2006).

5.2 Assessing Business Agility

In a Harvard Business Review article by Gottfredson et al. (2008), they argue that all organizations have different strengths and weaknesses, and meets different opportunities and threats. Furthermore Gottfredson et al. (2008) states that assessing these strengths, weaknesses, opportunities, and threats accurately are the only way for management to determine where to focus performance-enhancing efforts and what change related goals that are reasonable to set for the organization. This implies that it is important to place an organization within its right context before any performance enhancing efforts can be made.

We have found it difficult to locate articles concerning the advantages and disadvantages on generic assessment tools. The theory we have found on assessing business agility are often only promoting rather industry specific models (e.g. Vinodh et al., 2010), and consultancy firms who use frameworks are often only promoting their own analytical tools by bragging about previous success stories without any discussion of the problematic with using such a generic tool (e.g. The McKinsey Quarterly, 2008). Nevertheless, Christensen and Raynor (2003) states in a Harvard Business Review article that managers should be careful when using generic management theory, since no single theory findings will be applicable to all companies and the wide variety of business situations they operate in. Furthermore, they argue that management theories that help one company might become fatal for another company that is operating under different conditions. Snowden and Boone (2007) supports this contextual need, but also argues that in less complex circumstances, simplifications through frameworks and different assumptions are useful and can speed up decision processes while still obtaining relevant results.

According to Vinodh et al. (2010), Kumar and Motwani (1995) where the first researchers to publish a constructed model to measure business agility. Their model focuses on manufacturing companies and can be used to try to assess the strategic position of an organization in terms of agility. In a summary of agility measurement methodologies performed by Yauch (2011), the author concluded that it is hard to assess the level of agility of an organization, even the relative agility of an organization compared to another. Tsourveloudis and Valavanis (2002), as cited by Yauch (2011), argue that business agility metrics are challenging to define due to the vagueness and large number of dimensions affecting the concept agility. Yauch (2011) says that that agility measurement methodology comes in a wide variety of types and styles, and that some agility measures are only qualitative while others have more of a blend of both qualitative and quantitative. Many agility measurements of organizations have multiple outputs and many different measures/capabilities, and there are only a few that use multiple inputs in order to assess the agility in one single index (Yauch, 2011).

According to Lin et al. (2006), most of the ways to measure business agility are using subjective linguistic terms that can be characterized by multiple possible interpretations and vagueness when assessing of the judgments of persons into numbers. They also state that the selective judgment and the possibility to select what to use in these measurement techniques are significantly affecting these methods. Furthermore, Lin et al. (2006) argues that fuzzy logic can be a suitable tool when to put numbers to occurrences that are vague and not precise. The authors refer to a number of researchers (e.g. Menchacha and Bhattacharya 2000; Basim and Imad 2003; Beskese et al. 2004; Büyüközkan and Feyzioglu 2004; Lin and Chen 2004) who states that fuzzy logic has a lot of possible uses in decision making, and argues that fuzzy logic techniques are a good way of incorporating qualitative knowledge into the decision-making, since decision-making has often unclear boundaries and is not that easy to define.

6 Interviews

In this chapter the findings from our interview sessions is put forward. First, the results connected to factors affecting business agility are presented. This part is followed by the findings on assessing business agility.

6.1 Business Agility

All interviewees agreed on the importance of being agile in today's competitive environment, and that there are so many different factors that affect it. Most interviewees brought up the high presence of innovativeness in agile organizations, and Staffan Junel argued that the innovativeness should permeate the entire company. Sustainable development and corporate social responsibility was also a topic discussed by some, and both Staffan Junel and Kari Forsén thought it could be included in the framework. Furthermore, we also found some reluctance towards a too high external focus on e.g. adapting to new technologies and trends. When analyzing the business environment for opportunities, many interesting ones might appear, but it is not possible to take on each single one. "Everything has its time. It is not possible to do everything all at once" (Zetterberg, 2012). Since business agility is concerning change, Hans Stråberg argued that it can be important to work with change teams to realize the different changes, especially if they are of a more radical form.

6.1.1 Corporate Foresight

All of the managers that we have interviewed argued that the ability to forecast what the future holds is of great importance for an organizations level of agility. They stated that it is not possible to only focus on the internal processes and functions. Organizations must follow trends in the surrounding environment to be able to make well-informed and accurate decisions and not be taken by surprise. Besides standardizing and having a culture of change, learning how to detect trends and what signals in the surrounding to listen to is one of the most important tasks for an organization that is striving towards being agile, according to Peder Zetterberg, who has held executive positions in a wide variety of industries. Staffan Junel also argued that corporate foresight is very important in order to be agile. Just as in the pilot interview, he once again stated that one really important feature of a good business leader is the ability to "look around corners", which comes from lots of experience and by having the right intelligence provided. Hans Stråberg, currently board member of Investor AB and a former CEO of the Fortune 500 company Electrolux, argued that it is important to have a lot of contact surfaces to be able to make qualified and substantiated decisions. "It is important to put your ear to the railway trace" (Stråberg, 2012). Peter Elving said that usually other companies than your own develop new ideas (technologies, sales channels etc.). For long-term competitiveness, organizations need to be first with new ideas or fast to follow, which implies that a good corporate foresight

capability is of importance (Elving, 2012). Elving stated that regardless if you develop the new ideas yourself or adapt to them quickly, you have to be at the forefront. Furthermore, he also argued that "organizations that only tries to follow others sometimes end up too far behind", and that it is good to have the mentality of always being first.

During the interviews all have agreed on that continually analyzing customer requirements is extremely important for being able to be agile, but other areas within corporate foresight where also discussed by the respondents. Peder Zetterberg argued that changes can occur in many different areas and gives technology, customer's desire and distribution channels as examples. He named the large Swedish furniture retailer IKEA as an example of an organization that is good at analyzing and taking advantage of business intelligence from many different areas such as customer desire, and market fluctuations. By having a focus on analyzing trends at every single store, they are extremely good at meeting customer demands at each individual store. Regarding the importance of looking for new sales channels to attract new customers, Peder Zetterberg named Internet sales channels as an example of a change in the way organization sell to customers, and those who were quick to adapt to this trend have been able to make large profits on it before others managed to take the step themselves. Hans Stråberg said that after the rapid globalization of the world after 1989, with the rise of Eastern Europe, China, and the Internet, new threats and opportunities appeared to established organizations such as Electrolux. In the case of Electrolux, the Chinese begun to build cheap vacuum cleaners, taking market shares rapidly. By having a high focus on analyzing the market and competitors, Electrolux managed to see this threat early on, and was able to adjust in time.

Stråberg also gave another example of the benefits and the issues connected to corporate foresight. After the financial crisis that followed the subprime mortgage crisis in the late 2000, Electrolux sales figures went down. The main question for the management team at Electrolux during this time was when to pull the brakes and downscale the operations. They pulled the brakes early in relation to their competitors, which resulted in that they did not suffer as much from the crisis and could recover quicker. In the case of Electrolux, Stråberg explained that they used signal products to forecast the future customer demand for other products. They knew from earlier that when the sales in the vacuum cleaners went down, soon the sales of many of the other products in their portfolio went down. By monitoring the sales of vacuum cleaners, the management team could better forecast the future sales for their other products as well. He also stated that, just as important it is to be prepared and to take the necessary decisions early on, it is equal important not to overreact too early. "You do not want to cry wolf if nothing happens" (Stråberg, 2012). Furthermore, he said, "With change, the right moment to act comes crawling like a snail and disappears like a lightning".

6.1.2 Internal & External Collaboration

All interviewees agreed on that different types of internal and external collaborations are necessary for being agile. As an example, Anders Rolf talked about the automated teller machines (ATM), which is a service that the banks need to have but is not a competitive advantage for them. Instead of Danske Bank, Handelsbanken, Nordea, SEB and Swedbank respectively having one ATM within a small radius, each very expensive to maintain, they started collaborating through the start-up of a separate company, Bankomaternas Automatbolag AB, which is taking care of the ATMs. This collaboration enables them to cut fixed costs on a process that is not a competitive advantage, and they can each focus on other, more important, processes. Peder Zetterberg also talked about the importance of external collaborations in order to become more agile, and gave the example of Pharmacia. When he worked there, the company had collaborations with many different external partners (e.g. Uppsala University). This enabled Pharmacia to be more innovative, and also gave them more contact areas to the market, with which to detect new trends and technologies in the world. External collaborations demands loosening up the boarders towards the partners according to Peter Elving, and although this come with some risks it also enable agility. He argued that large, less agile organizations tend to be more closed, which makes it possible for smaller collaborative organizations to rise. Furthermore, Peter Elving also said that there should be a seamless collaboration between different units within the organization.

According to Staffan Junel, when becoming agile, one aspect is to look into outsourcing. He said that two questions that the management in an organization should continually ask itself are; (1) how much of our operations have we outsourced, and (2) how much can we outsource? The aim is to always find parts of the operation, which not is a competitive advantage for the organization to keep in-house, that others can do better. Although pointing out the importance of external collaborations, Staffan Junel said that it is important to be aware of the duration time of contracts with external partners. E.g., long durations on rental contracts or with an IT hosting partner might hinder the ability to adapt to changes. Hans Stråberg also argued that it is important to outsource those capabilities that other can do better or equally good, but it is essential to keep important knowledge within the organizations. When outsourcing, he said that it is important to not be too firmly tied to the supplier. Clear contracts should exist and processes should be standardized as much as possible to allow an easy replacement of the outsourcing partner. Otherwise it is possible that a supplier gets to powerful and starts to earn more than your organization, resulting in higher demands and lowered margins for yourself (Stråberg, 2012).

6.1.3 Culture of Change

The area that most of the managers we interviewed argued to be one of the most important ones for affecting the agility was the culture of the organization. Peter Elving talked warmly about the importance of a culture of change, and referred to the well-known example of Kodak, where they, according to Elving, probably had most of the necessary corporate foresight right but not the right culture of change, which led them to bankruptcy recently. Furthermore, he said that culture of change is also the hardest to work with. He stated that "usually about 90% of an organization does not know what the organizations vision, mission and values are", and that it is important that these are not too complex to understand, so that they easily can be spread throughout the company. Peder Zetterberg argued that working with the corporate culture is probably the most important part in becoming an agile organization. Zetterberg also said that getting a good company culture is one of the more difficult tasks for organizations to achieve. When working at Pharmacia in Uppsala, Sweden, Zetterberg felt that the climate was very collaborative and "opened-minded" towards creative thinking, which made it fun to work there and created an innovative atmosphere. That climate was stimulating to work in, and it is a good example of a company culture that motivates change.

According to Hans Stråberg, it is always hard to be prepared for change, and says that a lot of organizations are stuck in doing operations as they always have done, and are blind to see what possible changes that can/should be made. Stråberg further said that in organizations it is important to have an awareness of why continuous improvement and change is essential. He said that people in general are afraid of change, and when they are faced with it they usually ask two things; (1) what does it mean, and (2) what's in it for me? Thus making it important for the management take these questions in consideration when approaching the work force. Hans Stråberg also argued that there could be huge differences in mind-set of the workforce. "If you ask two persons, working with the same task, what they are doing, one might say that he is chopping stone while the other says that he is building a cathedral" (Stråberg, 2012). Furthermore, he argued that it is often harder to make changes to an organization when it is performing well. When the employees know that the organization is not performing well, they are more prepared to make the necessary sacrifices (Stråberg, 2012).

Staffan Junel argued that it is of importance for agile organizations to focus on finding and recruiting people with the right skills, and on employee development. A detailed development plan for the staff, and also a replacement plan for key employees should be in place. Peter Elving also underlined the importance of employee development in order to become more agile, and said that the amount of resources organizations puts into increasing the knowledge of their staff is unfortunately often too low. As an example, he said "educating the staff in new IT-systems is usually 10% of what should be needed". The

same was also supported by Hans Stråberg, who said that those organizations that do not allocate enough resources to educate their staff are doing themselves a disservice. Kari Forsén also argued that it is important to find the right people, and that project teams and functions within an organization should have a diversified background. She stated that, by having a good mixture of men, women, and different cultures within a group it will be more dynamic and effective, and have a broader set of knowledge, leading to e.g. better understanding of customer needs and innovativeness. Although she argued that diversity is important for business agility, she also stated that it is harder to set up a diversified group, and demands more time initially to get them started than compared to a homogeneous group.

Kari Forsén stated that some kind of incentives can be used to promote behaviors that will improve the organizations agility, but she also argued that it is not trivial to form such an incentive system. As an example, she said that incentives can be used to encourage collaboration and continuous improvements, but sometimes it is more important for an employee to be incentivized for individual performance, which encourages working extra hard towards a certain goal within a given timeframe. Forsén also argued that incentive plans should always be formed in a way that is connected to clear goals, which are easy for the employees to understand and how to achieve.

6.1.4 IT

During our interviews we have met somewhat different attitudes towards IT enabling agility. Although everyone agrees on that IT can enable agility, some also gave examples of how IT might hinder business agility. According to Staffan Junel, large non-modular IT systems that have been modified and built on during long periods of time are often hindering agility. Just as mentioned previously, he gave ERP systems as an example of where many organizations have spent millions of SEK on development, and turned so complex that it is extremely expensive and time consuming to make adjustments or add new features to them. Hans Stråberg said that it is often very hard to make changes to IT-systems, and that sometimes it is quicker and even necessary to run the system manually with a paper and pen.

Anders Rolf, currently CIO at Forex Bank and has a background in many other Swedish banks as well, argued that much of the problems with making adjustments in or add-ons to existing IT systems (e.g. high costs and time consumption) arises because organizations tends to manage this themselves although it is not there core business. He said that IT is extremely important for banks but engaging in efforts such as developing applications, or hosting systems should not be the core competence of a bank, which he says that many banks argues today. Instead it is lending money and similar services. Anders Rolf thinks that most applications a bank needs (such as one for lending money, or calculating

exchange rates) are fairly simple and could be developed and hosted by any IT organization focusing on banking services. But it is not only software development that can be outsourced. At Forex Bank they pay a fixed price per workstation. When a new employee starts/resigns, or a new office is opened/closed, their IT outsourcing partner takes care of all necessary installments, which makes it extremely easy and quickly scalable for Forex Bank. They have outsourced hosting, service, and development of applications, which has lowered the cost for IT to 5% of the total fixed costs at Forex Bank (as compared to about 27% for one of the largest banks in Sweden according to Anders Rolf), and it also enables them to put resources on finding new business models. By first becoming more agile, it is easier for an organization to be able to grow according to Anders Rolf. At Forex Bank they spent three years in becoming more agile by outsourcing IT. Now they can easily manage the 200-300 new customers they obtain each day. Kari Forsén also agreed on that outsourcing of none-core business IT could enable agility because it allows the organization to focus on more important parts instead. She said that an IT outsourcing partner usually has more knowledge within the area, and can help the organization to deliver IT that creates maximum value instead of demanding lots of resources just to keep floating.

Some interviewees also brought up standardizing IT. Peder Zetterberg argued that it is vital for an organization to standardize its IT systems when trying to become more agile, and as a CIO of Capgemini Nordic he managed to turn 13 different ERP systems into one standardized and centralized system. This speeded up different processes and made adjustments or integration easier to manage. Anders Rolf also underlined the importance of standardizing, and gave an example of one of the largest Swedish bank, which has 4000-5000 different systems, many of them not standardized, and no common platform. When changes in one system are made, it usually affects the others, and this results in that about 400 consultants are working just to keep these systems integrated and running.

The importance of using IT to support business intelligence and to enable real-time internal and external information sharing, to increasing agility, was also supported during our interview sessions. Peter Elving said that organizations constantly face a tremendous amount of data, and IT is a useful support to handle and quickly analyze it. According to Anders Rolf, business intelligence systems are useful when determining on how to attract customers from competitors. By continually collecting and analyzing data about customers, it is possible to better target products and services. Hans Stråberg argued that business intelligence systems are crucial for making quick and informed decisions, and stated that a manual analysis of all data would often require too much time, and allow competitors to outrun you. Anders Rolf said that at Forex bank they focus a lot on internal communication through IT-systems, which has been very successful. Both internal and external information are in example published as news on an internal web, which helps the

employees to gain knowledge and stay updated. Peder Zetterberg named the company 7-Eleven as a god example of an organization where they use IT to enable a real-time information flow and to analyze all that information, which helps them to provide organizational flexibility while still lowering costs through e.g. smaller local stocks and improved logistics. Furthermore, Zetterberg talked about the Swedish retailer IKEA as an organization, which is extremely good at distribution. He said that by using some kind of business intelligence system they are able to observe trends and make forecasts in different areas globally, enabling them to direct the right products and services to each single store. Kari Forsén argued that the use of IT for information sharing (both internal and external) is not an option any more, but a necessity, and that it would take an enormous amount of time to gather all information without the support from IT. Furthermore, she said that with this increase in the amount of information gathered through different IT-systems, it is also necessary to use different IT-tools to help analyze it, implying that the use of business intelligence system will become more and more important.

6.1.5 Organizational Factors

Most of the individuals we have interviewed in this study have brought up factors related to the form, structure, and rules within the organization that have an effect on the organizational agility level. When Peder Zetterberg made the standardization of the IT-systems and also centralized many different administration offices to a single one at Capgemini Nordic, he managed to cut the fixed costs from 13% of the turnover to some astonishing 3%. Cutting fixed costs, he argued, is important when striving towards becoming a more agile organization. Staffan Junel also argued that a cost structure with low fixed costs is good for an organization in order to be agile. He said that it is important to continually look at the income statement to sort out what the fixed cost are, and if they can be lowered. Large fixed costs tied in long-term contracts usually make it hard to quickly change the organization (or very expensive to do it), resulting in a less agile organization (Junel, 2012b). As mentioned before, Anders Rolf said that Forex Bank has spent three years on becoming more agile, and this was partly done by having lowered their fixed operational costs related to IT. Anders Rolf argued that they wanted to become more nimble, and did not see IT as their core competence, so they outsource their IT and turned some of their fixed costs into variable costs that were easy scalable. Now they are able to focus on what they do best, and are able to quickly change their operation into new directions.

The fact that complexity within the organization limits its ability to be agile was supported in the interviews. Hans Stråberg stated, "A high level of complexity in an organization is not good if changes are needed". Kari Forsén also argued that complexity in an organization could make it less flexible if change is necessary. Forsén said, "Complexity creates difficulties for communication and collaboration, thus a less agile organization".

Peder Zetterberg also argued that complexity is not recommended in order to be agile. When discussing complexity, he came back to the example of when he made the standardization of IT systems and centralization of administration offices at Capgemini Nordic. Through these actions there was a reduction in the organizations complexity (in addition to the lowered fixed costs).

Hans Stråberg argued that decentralized decision-making is very important for the ability to be agile. If most decisions has to be made central by a few number of executives, not only will the staff feel that they are powerless, it will also take longer time. Kari Forsén argued that formalization and centralization in an organization could be an obstacle in the creative process of idea generation and knowledge sharing. However, she also stated that having formalization in an organization could be a good thing. If there is not enough formalization in an organization, employees would do the same processes in different ways, and there would be no order and clarity, which would be time consuming and result in a less agile organization. Forsén said, "It is important to find a balance between a knowledge creating freedom and a simplifying and interaction enhancing structure".

6.2 Assessing Business Agility

All interviewees have agreed on the difficulties regarding having a generic business agility assessment tool, and that there might be a need for including industry specific weighting for a more accurate business agility assessment. According to Staffan Junel, when analyzing the degree of business agility in an organization, different contexts will shift the importance of some aspects that you would want to look into. As an example, he said that if you are in the manufacturing business, some things are more important when striving for agility than if you are in the service industry. Hans Stråberg thought that it would be clarifying to divide the "sub categories" in the framework into internal and external factors. Peder Zetterberg thought that it would be useful to measure the level of business agility, and stated, "What is not measured within an organization does not exist".

7 Model

In this chapter our model, based on our theoretical framework and the interviews, is presented. The model served as a base for the following survey conducted to put relative weights on the importance of each factor. At the end of this chapter, our findings on assessing business agility are presented.

7.1 Business Agility

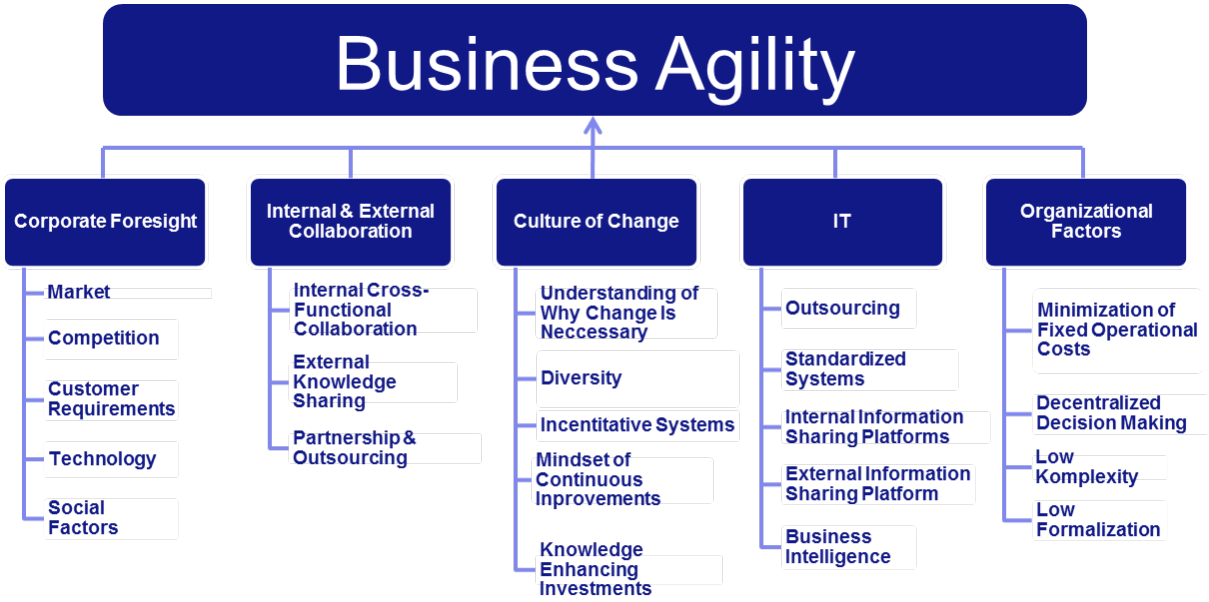

Figure 2. Business agility model

In figure 2, the findings from the theory and interview sessions that we have chosen to include in the model are illustrated. For each main category, a number of sub categories have been formed. All of the categories were found to have support from theory, which is further presented later in this chapter. Since the interviews had a semi-structured form to be able to collect broad qualitative data, the support for each category from the interviews reflects the interviewer's interpretation of the findings.

Although some interviewees bring up sustainable development and corporate social responsibility, we have not been able to find support in theory that this actually improves business agility. Therefore, we have chosen not to include this in the model. Nevertheless, such engagements will probably become increasingly important for organizations, which in that case hopefully will be an output from e.g. analyzing customer requirements and social factors (corporate foresight concerns).

Furthermore, innovativeness has been argued by most of the interviewees to be of importance for an organization striving for agility, which is also supported in the theory (e.g. Crocitto and Youssef 2003; Becker et al. 2006; Sherehiy et al. 2007). We argue that an organizations innovativeness will increase when improving efforts within many of the given sub categories in figure 2.

In the table below, all main categories are presented with supporting findings from both earlier research and the conducted interviews.

Table 3 – Theory and interviews supporting main categories

Category	Theory	Interviews
Corporate foresight	Arteta and Giachetti (2004), Becker et al. (2006), Conboy et al. (2005), Von der Gracht et al. (2010), Hines (2006), Ratcliffe (2006), Tidd and Bessant (2009), Levary (1992), Sambamurthy et al. (2003), Sharifi and Zhang (1999), Sherehiy et al. (2007), St. John et al. (2001), Sull (2010a), Tseng and Lin (2011), Weill et al. (2002), Yusuf et al. (1999)	Elving (2012), Forsén (2012), Junel (2012), Rolf (2012), Stråberg (2012), Zetterberg (2012)
Internal & external collaboration	Jackson and Johansson (2003), Lin et al. (2006), Vinodh et al. (2010), Tseng and Lin (2011), Sharifi and Zhang (1999), Sherehiy et al. (2007), Weill et al. (2002), Yusuf et al. (1999), Hugos (2009), Sull (2009), Gunasekaran (1998)	Elving (2012), Forsén (2012), Junel (2012), Rolf (2012), Stråberg (2012), Zetterberg (2012)
Culture of change	Crocitto and Youssef (2003), Dessler (2009), Dove (2005), Hugos (2009), Pascale (1997), Piercy (2009), Sambamurthy et al. (2003), Sherehiy et al. (2007), Sull (2010a), Tseng and Lin (2011), Yauch (2011), Weill et al. (2002)	Elving (2012), Forsén (2012), Junel (2012), Rolf (2012), Stråberg (2012), Zetterberg (2012)
Information technology (IT)	Chopra and Meindl (2010), Cross (1995), Devadasan et al. (2005), Overby et al. (2005), Hugos (2009), Mathiassen and Pries-Heje (2006), Sambamurthy et al. (2003), Sull (2009), Pries-Heje (2006), Sherehiy et al. (2007), Tseng and Lin (2011), Lu and Ramamurthy (2011), Verstraete (2004), Vinodh et al. (2010), Weill et al. (2002), White et al. (2005)	Elving (2012), Forsén (2012), Junel (2012), Rolf (2012), Stråberg (2012), Zetterberg (2012)

Organizational factors	Arteta and Giachetti (2004), Dove (2001), Sherehiy et al. (2005), Vinodh et al. (2010), and Tseng and Lin (2011), Devadasan et al. (2005), Piercy (2009), Hugos (2009), Grantham et al. (2007), Sull (2009), Pertusa-Ortega et al. (2010), Fredrickson (1986), Von Krogh (1998), Kern (2006), Okhuysen and Eisenhardt (2002)	Elving (2012), Forsén (2012), Junel (2012), Rolf (2012), Stråberg (2012), Zetterberg (2012)

7.1.1 Corporate Foresight

Our findings from both the literature and the interview sessions agree on the importance of analyzing changes in the business environment, and it also seems to be regardless of industry. All of the five business agility drivers that Tseng and Lin (2011) stated were supported by most interviewees. Hence, we decided to use these sub categories to divide up the main category corporate foresight in the generic framework.

- Markets
- Competition
- Customer requirements
- Technology
- Social factors

7.1.2 Internal & External Collaboration

Just as we have found in the theory on that internal and external collaboration improves organizational agility through e.g. faster product development, or better and alignment with customer needs (Lin et al. 2006; Hugos 2009; Vinodh et al. 2010), all interviewees agree on that different types of internal and external collaborations are necessary. They argue that it is important for the knowledge creation and sharing in an organization, which is a key in becoming more agile. By having internal cross-functional collaboration, different functions shares knowledge and become better aligned and agile (Weill et al. 2002; Hugos 2009). External knowledge sharing efforts, such as the one Peder Zetterberg described that Pharmacia had with Uppsala University helps the organization to become more innovative and also be better at corporate foresight since more contact surfaces with the business environment helps in detecting new trends and technologies. Through the use of partnerships (such as the case of Bankomaternas Automatbolag AB) and outsourcing of processes that others can do better, the organization can focus more on its core business, which enables agility according to both the literature and most of the interviewees. Although our findings show that there are great benefits that can come through partnerships and outsourcing, they also show that there are risks involved with external collaborations, such as exploitation of knowledge or the possibility of being stuck in long-

term contracts. Such factors need to be considered when engaging in external collaborations.

With the findings made, we argue that a generic business agility framework should include the following factors related to collaboration:

- Internal cross-functional collaboration
- External knowledge sharing
- Partnership & outsourcing

7.1.3 Culture of Change

The area that most of the managers we interviewed argued to be the most important was the culture of the organization. Due to this and the fact that most theory argues that having a culture of change is one of the most important characteristics of an agile organization (e.g. Dove 2005; Sherehiy et al. 2007; Tseng and Lin 2011; Yauch 2011), it has a given spot in the framework.

To have diversity in the workforce, good incentive systems and not neglect knowledge enhancing investments in order to enhance the agility of an organization is in line with the literature (Sherehiy et al. 2007; Dessler 2009; Sull 2010a) and also supported by most of the interviewees. Furthermore, understanding why change is important (Sherehiy et al. 2007; Dessler 2009; Hugos 2009; Sull 2010a) and having a mindset of continuous improvement (Pascale et al. 1997; Crocitto and Youssef 2003; Sambamurthy et al. 2003; Sherehiy et al. 2007; Hugos 2009) was also supported by the interviewees.

Under the main category culture of change we have therefore chose to divide it up into the following sub categories:

- Understanding of why change is necessary
- Diversity
- Incentive systems
- Mindset of continuous improvements
- Knowledge enhancing investments

7.1.4 IT

Although the attitude of the interviewees where mixed towards the connection between IT and business agility, due to the fact that IT systems can often be time consuming and expensive to adapt to changes, all agreed on that some processes can be made more efficient with the support from IT, thus enabling agility. The area most agreed upon in both theory (e.g. Weill et al. 2002; Sambamurthy et al. 2003; Overby et al. 2005; Sherehiy

et al. 2007; Hugos 2009; Chopra and Meindl 2010) and by the interviewees, in which IT can enable agility, was to improve knowledge sharing and speed up decision processes through the use of both internal and external real-time information sharing platforms, and business intelligence systems. Furthermore, just as stated in our theoretical framework regarding the importance standardizing IT (e.g. Weill et al. 2002; Hugos 2009) and outsourcing of non-core business IT, we found evidence in our empirical study for this as well.

By mapping our theoretical framework to the empirical findings, we have found some recurring factors that seem to be suitable in a generic framework for business agility. These are:

- Outsourcing
- Standardized systems
- Internal information sharing platforms
- External information sharing platforms
- Business intelligence systems

7.1.5 Organizational Factors

One of the harder categories to define and summarize in just a couple of sub categories was organization factors. The most recurring areas that came up during the interviews where, decentralized decision process, low complexity and formalization, and reduction of fixed operational costs. These areas are all supported in the theory section. The sub category of formalization was the one hardest to draw conclusions about. In both literature and interviews, arguments for having both low and high level of formalization were found. In the framework for business agility we will use the hypothesis that low formalization is enhancing the agility level, although this standpoint should be used with some caution. Thus, we argue that a generic business agility framework should include the following factors:

- Minimization of fixed operational costs
- Decentralization of decision making
- Low Complexity
- Low level of formalization

7.2 Assessing Business Agility

Lin et al. (2006) says that many researchers (e.g. Menchacha and Bhattacharya 2000; Basim and Imad 2003; Beskese et al. 2004; Büyüközkan and Feyzioglu 2004; Lin and Chen 2004) argue that fuzzy logic can be a good tool in decision-making frameworks. There are also a lot of articles using fuzzy logic to assess the agility level of an organization, for example.

"Agility evaluation using fuzzy logic" by Lin et. al. (2005), and the newly published article "Thirty criteria based leanness assessment using fuzzy logic approach", by Vinodh and Vimal (2012).

By having a model for business agility assessments based on relatively few main categories (with only a few sub categories respectively) affecting the agility level of an organization, it is easier for managers to see what areas to focus on in order to increase the agility of their organizations. By using a business agility assessment tool continuously in an organization, changes can be monitored over time, resulting in an interesting internal benchmark. In order for this to be possible, the way assessments are performed must be the same over time.

In one way or another, the skills of the consultants using the business agility framework developed in this report will be essential for the success of an assessment. In the mapping between the categories and sub categories with the assessed organization, predetermined questions will be used for standardization enabling comparisons to be made. But in order for the assessments to be precise, consultants must use their competence to find agility levers that are not included in the subset of agility enablers found the most important in general in the derived framework.

Just like all of the managers that we have interviewed argued, it is hard to develop a generic framework/tool for assessing business agility. When using fuzzy logic and a modular framework for assessing business agility, it is easy to make alterations when new findings occur. We have tried to have a research approach that enables the framework to be as generic as possible to avoid industry specific business agility enablers. Anyhow, most of the interviewees argued that the model would be better if the weights used for the categories in the framework were industry specific due to differences between industries in the way they operate.

8 Weighting of the Categories

In this chapter the results from the survey is put forward and discussed. The results are presented as a list of weightings for each category in the model at the end of this chapter.

8.1 Business Agility

The sent out survey (see appendix 1) included a number of statements, which the respondents were asked to grade from 1 to 7 (where 1 was not important at all, 4 was just as important as anything else, and 7 was crucial) regarding their importance for enabling business agility. Results graded below 4 had to be considered if to be removed from the business agility framework.

In figure 3, the mean value given on each main category is corresponding to how important the respondents thought the different sub categories are. The standard deviations and mean values for both the main categories and the sub categories can be found in the table in appendix 2. The standard deviations can be considered a measure of distribution within the answers. In general, the standard deviations in this survey are considered to be relatively even and no further analysis has been made of them. Out of the 130 managers that the survey was distributed to, we got 32 answers. This is a response rate of ~25 %, which is higher than we expected since the survey went out to managers at successful companies, and they might be assumed to have limited time.

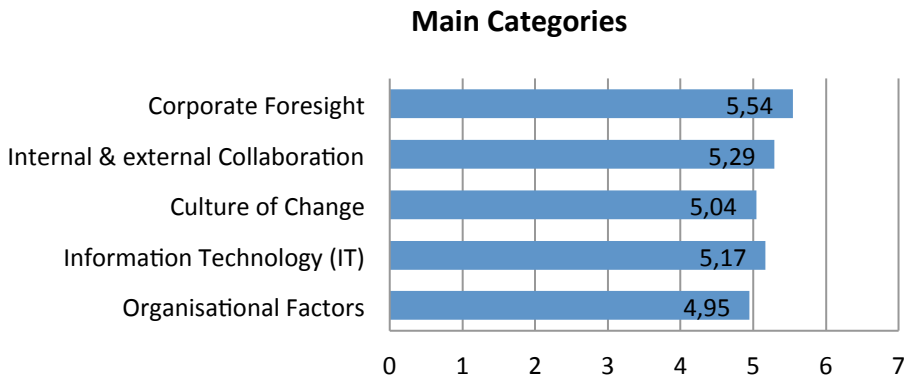

Figure 3. The mean value of the aggregated results of the sub categories.

As can be seen in figure 3, the category that was considered the most important was corporate foresight. This is not surprising since all of the managers in our interview study argued that this was of great importance for an agile organization.

However, one interesting finding is that the aggregated result from each sub category (figure 3) shows a somewhat different result than the one obtained from the part in the

survey were the respondents were asked to rank the five main categories regarding the relative importance they have for achieving an agile organization (see table 3). The result here shows that having a culture of change was seen to be the most essential by the respondents, and IT was seen to be least important of the five main categories.

Table 3. The mean value of the ranking between the five main categories, where 1 was seen to be most important and 5 least important.

Main Categories	Relative ranking (1-5)
Corporate Foresight	2,59
Internal & External Collaboration	2,56
Culture of Change	1,81
Information Technology (IT)	3,50
Organizational Factors	3,06

When looking at the differences in the category culture of change (found most important in the ranking, but second least important in the aggregated result), to connect this to the result from the interview sessions, most interviewees argued that having a culture of change is probably most important to work with, but at the same time the hardest one to grasp. The results from the survey and the interview sessions together might reflect the uncertainty and subjective perception linked to corporate culture. Furthermore, the sub categories that the aggregated result is based on have derived from our findings on what factor in the corporate culture that promotes agility. These factors might not be aligned with the subjective view that the respondents of the survey have of the comprehensive term "culture of change". Thus, there can possibly be a mismatch due to this, which then is reflected in the difference of the results.

If instead looking at IT (found to be least important in the ranking, but ended up in third place in the aggregated result), there might be the exact same problem here. Just as the interviewees had a difference in attitude towards IT enabling agility, there might be reluctance by the respondents towards the comprehensive term of IT being an agility enabler. This might perhaps be due to their own experience of expensive and time consuming IT initiatives. Anyhow, our sub categories are the ones that have been found to be the most important agility enablers in our study, and the respondents might have different attitudes towards these subsets of IT than the overall concept of IT.

Although the ranking provides this study with some interesting results, we argue that it includes a more biased view since it is based on the respondent's subjective view on a number of broad categories. The aggregated result is instead based on a perception of a

more narrowed down subject. Hence, the aggregated result will be the most suitable for the business agility framework put forward in this report.

8.1.1 Corporate Foresight

Corporate foresight was the one main category that got the highest aggregated result when adding up the responses in the survey. As can be seen in figure 4, customer requirements was the foresight activity that the respondents thought to be the most important, implying that a strong customer focus is important for business agility. The sub category that got the lowest result was social factors (e.g. laws and regulations). This might be related to the fact that some of the managers responding to the survey are/have been active in organizations that have not been exposed to continuous changes in laws and regulations, thus not being limited by them. This category is perhaps more important in highly regulated industries, such as banking or health care. Anyhow, the results from the survey is in general high for all categories, and none of the sub categories should be excluded from the framework..

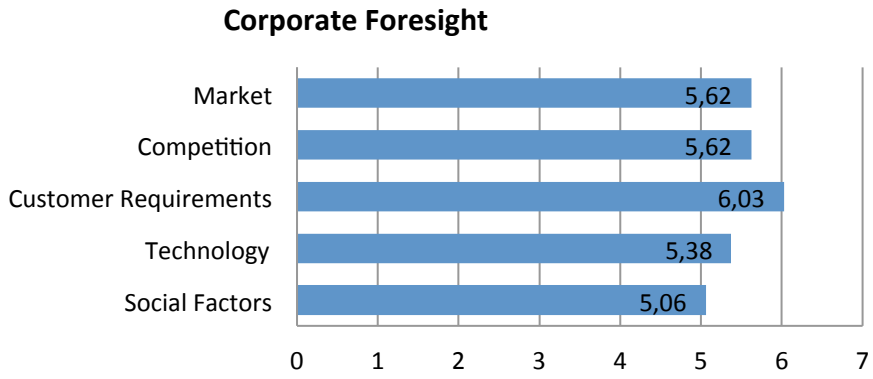

Figure 4. The mean value of the corporate foresight sub categories.

8.1.2 Internal & External Collaboration

The main category that got the second highest result was internal and external collaboration. Within this category, the factor that clearly got the highest result (and also the highest result when comparing to all other sub categories) was to have internal cross-functional collaborations within the organization. This is the only sub category that can be seen as exclusively internal and the rest of the sub categories can be seen as having more of an external focus. We assume that this result is related to a fear of losing control over important knowledge that helps the organization to stay competitive. Regarding the low result on outsourcing, this can perhaps be related to the many failure stories of outsourcing initiatives that can be read about in business news from time to time, which might lead to a caution towards such engagements. Anyhow, both the theory and most of the interviewees

agreed on that outsourcing of non-core processes could enable agility. Thus, we have chosen to include outsourcing and all other sub categories in the final framework.

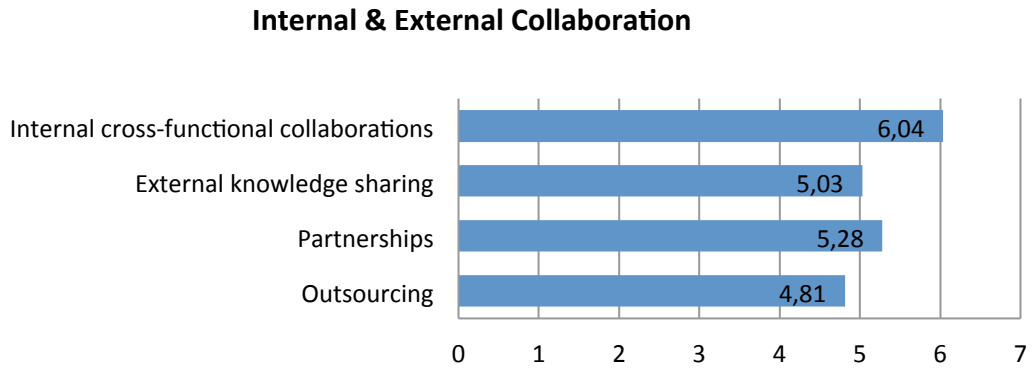

Figure 5. The mean value of the internal & external collaboration sub categories.

8.1.3 Culture of Change

Surprisingly to us did the main category culture of change get the second lowest aggregated result in the survey. During our interviews this was the category that many of the executives argued to be perhaps the most important one for achieving agility, and the theory also brought up a culture of change as an agility enabler. The results within the sub categories were quite evenly distributed, and the category that got the lowest result was incentive systems. We argue that this might be due to the fact that incentive plans are found to be complex and can sometimes do more harm than good, leading to that some respondents might have bad experiences. Nevertheless, much research argues that incentives can, if used properly, promote behaviors that improve business agility. Furthermore, diversity is also seen by many researchers to positively affect agility. Hence, all categories will be included in the framework.

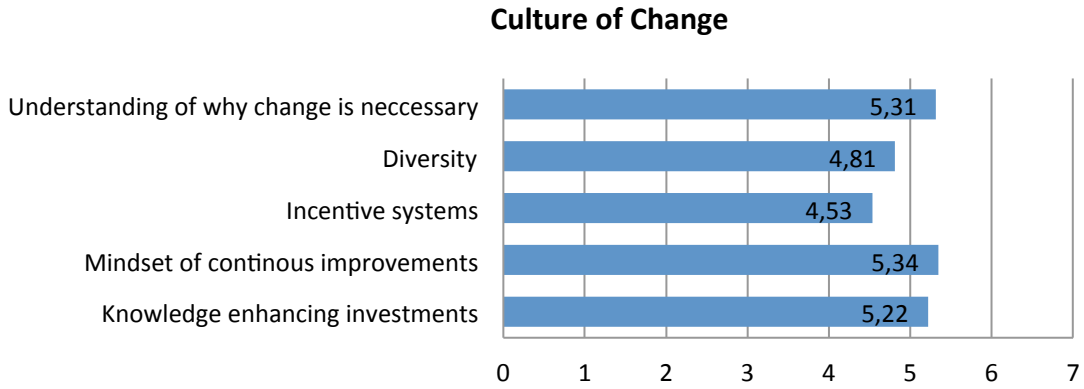

Figure 6. The mean value of the culture of change sub categories.

8.1.4 IT

The sub categories under IT are generally rated high, and will all be part of the final framework. One interesting finding here is, just as in the case of the category collaboration, that the two categories where the organization exposes itself externally (outsourcing, and external information sharing platform) generally received a lower score than the other categories. We argue once again that this might be caused by reluctance towards the risk of losing control over knowledge connected to the organizations competitive advantage.

Another interesting finding was that outsourcing of IT received a high result when linking it to the agility level of an organization. Since outsourcing in the main category external collaboration received a lower grade, this could reflect that managers understands the benefits of outsourcing the non-core IT to those who are specialized in delivering such services. This implies that there is a big market opportunity for IT consultancy firms if organizations increasingly becomes aware of the importance of business agility and starts engaging in agility improvement efforts.

Perhaps the most important finding was that internal information sharing received the highest result, and since internal cross-functional collaboration was graded highest in the collaboration category, managers seems to think of internal collaboration and knowledge sharing as the most important focus areas for improving agility. Nevertheless, the high results on the internal focus might be due to the lower risk associated with it than compared to the risks associated with external exposure. Thus, the results, which essentially should only take agility in consideration, might have been biased by risk aversion of managers.

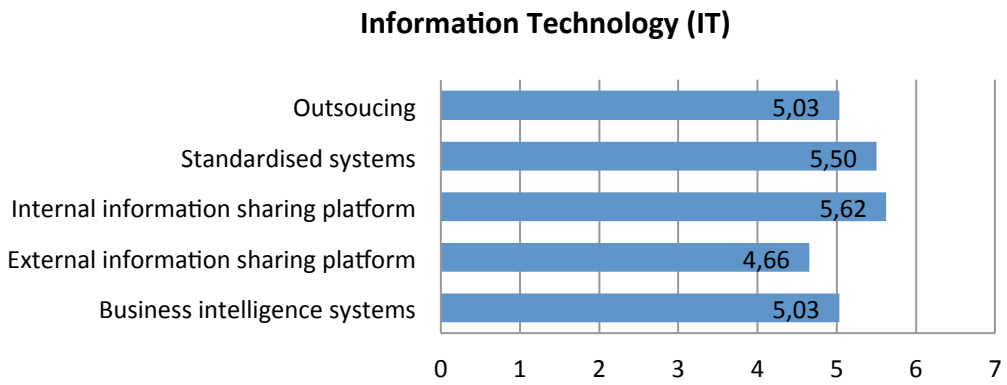

Figure 7. The mean value of the IT sub categories.

8.1.5 Organizational Factors

This was the main category with the largest spread in results in the sub categories. Organizational factors also has the sub category with the lowest mean value from the respondents, namely low formalization. This is not surprising since evidence was found in both the interview sessions and the literature that formalization is to some extent necessary for the organization to work effectively. Nevertheless, strict rules and policies are argued by many researchers to hinder communication and knowledge sharing, which are seen as agility enablers. Furthermore, some of the respondents that worked in the banking industry stated in the comments section of the survey that they need to have a very high level of formalization in their functions and processes due to legislative and security reasons. This might have led to that the answers from these respondents (and possibly others in different industries that are also highly affected by legislations) were not aligned with their actual opinion regarding low formalization being an agility enabler (i.e. biased by their perception of that low formalization is not an option).

We have found that the sub category formalization seems to be very contextual, and extra caution needs to be taken regarding the assessment of this sub category. To repeat the statement in the interview session by Kari Forsén, "it is important to find a balance between a knowledge creating freedom and a simplifying and interaction enhancing structure". Anyhow, we argue that formalization is an important part in the framework, and should be included together with the remaining three sub categories within organizational factors.

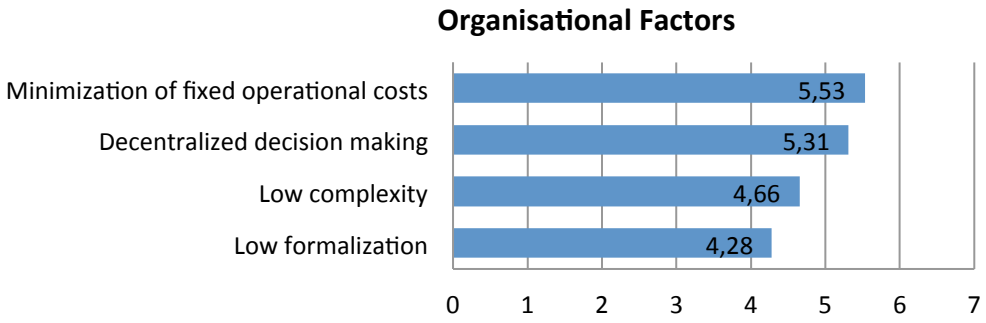

Figure 8. The mean value of the organizational factors sub categories.

In table 4, all of the sub categories are presented in order based on the survey results to enlighten how important the sub categories were considered regardless of main category.

Table 4 – Ranked results

Sub Categories	Value (1-7)
Internal cross-functional collaborations	6,04
Customer Requirements	6,03
Market	5,63
Competition	5,63
Internal information sharing platform	5,63
Minimization of fixed operational costs	5,53
Standardized systems	5,50
Technology	5,38
Mind-set of continuous improvements	5,34
Understanding of why change is necessary	5,31
Decentralized decision making	5,31
Partnerships	5,28
Knowledge enhancing investments	5,22
Social Factors	5,06
External knowledge sharing	5,03
Outsourcing	5,03
Business intelligence systems	5,03
Outsourcing	4,81
Diversity	4,81
External information sharing platform	4,66
Low complexity	4,66
Incentive systems	4,53
Low formalization	4,28

As can be seen, the single most important subcategory found by the survey was internal cross-functional collaborations closed followed by customer requirements. The sub category with the lowest score was low formalization.

8.2 Weights

The results from the survey are presented in a scale from 1 to 7 (as they were answered in the survey) (see table 5). In order to use them in a fuzzy logic calculation (relative value between 0 and 1), the results is presented in relative weights in table 5.

Table 5 – Weights of categories

Main Categories	Relative Weights
Corporate Foresight	0,21
Internal & External Collaboration	0,20
Culture of Change	0,19
Information Technology (IT)	0,20
Organizational Factors	0,19
Sub Categories	
Corporate Foresight	
Market	0,20
Competition	0,20
Customer Requirements	0,22
Technology	0,19
Social Factors	0,18
Internal & External Collaboration	
Internal Cross-Functional Collaborations	0,29
External Knowledge Sharing	0,24
Partnerships	0,25
Outsourcing	0,23
Culture of Change	
Understanding of Why Change Is Necessary	0,21
Diversity	0,19
Incentive Systems	0,18
Mind-set of Continuous Improvements	0,21
Knowledge Enhancing Investments	0,21
Information Technology (IT)	
Outsourcing	0,19
Standardized Systems	0,21
Internal Information Sharing Platform	0,22
External Information Sharing Platform	0,18
Business Intelligence Systems	0,19
Organizational Factors	
Minimization of Fixed Operational Costs	0,28
Decentralized Decision Making	0,27
Low Complexity	0,24
Low Formalization	0,22

9 Framework

In this chapter the framework is put forwarded in its whole, with weightings linked to each category, and explanations. A simple example of how to use fuzzy logic in the assessment process is also presented.

9.1 Business Agility Framework

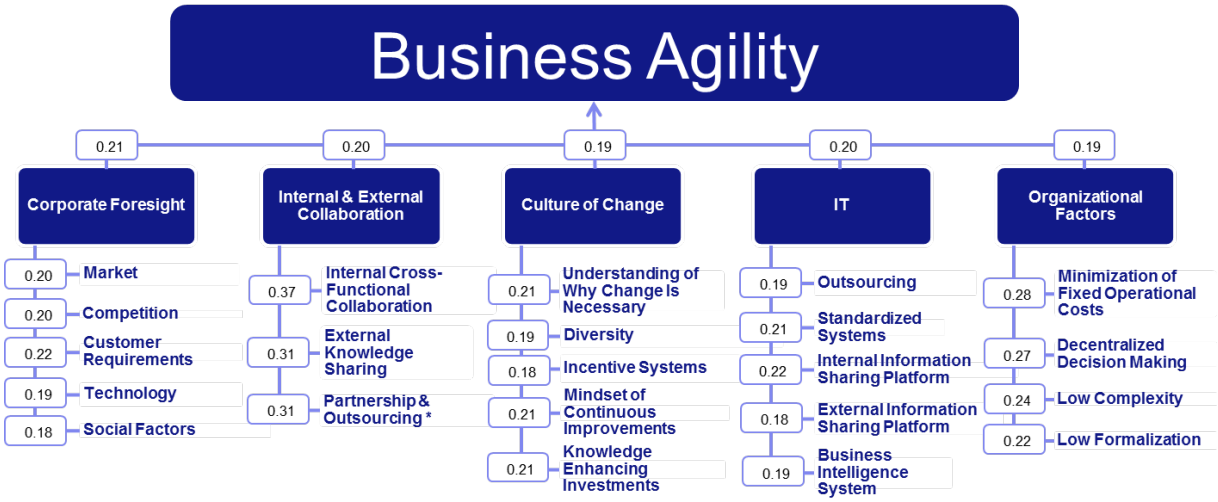

Figure 9. Business agility framework with corresponding weights related to the level of importance. It is important to understand that the weights for each sub category are strictly linked to the sub categories within the same main category, and should not be used as a relative measure with the sub categories under other main categories (see table 4 for such a comparison).

The findings presented in figure 9 are a sum up of the results from our study on business agility. It shows the main categories and sub categories found to be most relevant for agility in organizations, based on the finding from interviewees together with the literature on business agility. The survey results are presented in the form of numbers above each main category and next to each sub category, and these are the weightings in percent. The weights could be used in a fuzzy logic calculation when assessing an organizations level of business agility. Furthermore, they could also be seen as the relative importance of each sub category within its own main category. Hence providing information on what areas to focus on to have the highest impact on the organizations agility level within the given main category. The main category corporate foresight is found to affect the overall business agility level slightly more than the other main categories.

As can be seen in figure 9, the relative weights are not that differentiated in the main categories (weights between 0,19 and 0,21). This is mainly related to the fact that the survey results were relatively even, but partly also because of the representation in weights

between 0 and 1 (which is to be used in the fuzzy logic calculation) instead of 1 to 7. In order to see differences from the survey clearer it is recommended to review the tables in chapter 8.

9.1.1 Example of a Fuzzy Logic Assessment

This section presents a simple example of how fuzzy logic can be used in order to quantify the linguistic answer by customers and consultant's subjective view of the agility level of an organization. It is based on the principles used by Vinodh et al. (2010). The example is simplified and shows how one single main category can be calculated. Each sub category should have a number of questions, which should be possible to answer on by giving a number on a scale (Likert scale or similar), either by the customer or the consultant making the assessment. The weights, denoted $\bar{W}$, determines how important the different categories are in relation to the others, where the following holds

$$\sum \bar{W} = 1$$

The matrix containing answers from questions in each category is denoted by $\bar{R}$, and the equation for the agility level of the main category, $\bar{I}$, is

$$\bar{I} = \bar{W} \cdot \bar{R}$$

Using the weights for corporate foresight from our survey

W_1 = "Weight for Market"
W_2 = "Weight for Competition"
W_3 = "Weight for Customer Requirements"
W_4 = "Weight for Technology"
W_5 = "Weight for Social Factors"

the weight matrix is

$$\bar{W} = [0{,}21 \quad 0{,}20 \quad 0{,}22 \quad 0{,}20 \quad 0{,}19]$$

As an example, questions can be answered from 1 to 10, where 10 are the highest possible result and 1 is the lowest. The answers from the assessment could thus be represented by the matrix below ($\bar{R}$).

$$\bar{R} = \begin{bmatrix} 7 & 4 & 7 & 9 & 8 \\ 6 & 5 & 6 & 8 & 2 \\ 5 & 7 & 7 & 7 & 3 \\ 5 & 3 & 2 & 4 & 5 \\ 9 & 8 & 7 & 6 & 3 \end{bmatrix}$$

Then the agility level for each sub category would then be

$$\bar{I} = [6.38 \quad 5.36 \quad 5.8 \quad 6.83 \quad 4.25]$$

The total aggregated agility level of the corporate foresight category is then given by

$$\text{Mean } (\bar{I}) = 5.72$$

By performing similar calculations for each main category, and then make the same procedure with the weightings for the main categories, an aggregated agility level can be obtained.

10 Concluding Discussion

In this chapter our findings are discussed and what conclusions that can be drawn from it. Managerial implications and suggestions for further research are also put forward.

10.1 General Discussion

Having an agile organization in today's competitive and volatile business environment is argued to be as important as the assembly line was in the industrial economy. In this report, both the theoretical and empirical study supports this argument made by e.g. Tseng and Lin (2011). This indicates that business agility is a highly up-to-date topic, and can create interesting business opportunities for those who see the possibilities and can offer related products and services.

The framework for assessing business agility presented in this study has been used to develop an assessment tool for the consultancy firm that ordered this report. They are going to use the tool to analyze clients and obtain an output which illuminate areas where improvement related to agility is possible. This output will serve as a discussion platform in the sales process, with the final aim for the consultancy firm to pinpoint what packaged solutions, linked to business agility, that they can offer the client. In the development from this framework to such a tool, questions linked to each category should be formulated (this is what we have done in collaboration with the consultancy firm, but the ones we have formulated are not allowed to present here due to confidentiality), and these are to be used in the final assessment process.

It is important to understand that the weights in the framework are based on a limited survey, and should be seen as indications of what categories and sub categories that are considered to be most important by a subset of Swedish managers. The framework is constructed to be modular and can thereby easily be altered if a larger survey is conducted, or new categories are found to be relevant to add. By making it modular and incorporate different weights, it will be possible to improve the tool by adding for example weights linked to certain industries, or industry specific categories and questions. In fact, we argue that it is important to continually make improvement by for example adding new, industry specific questions and/or replace the existing ones. Nevertheless, we argue that a tool derived from the framework put forward in this report can be used with the current weightings and categories to pinpoint improvement areas, and also be useful for benchmarking purposes to compare a client with previously made assessments of organizations within the same industry.

The weights linked to the main categories, which derived from the survey conducted, got significantly contrasting results when obtained from the aggregating of sub categories

than obtained from the respondent's internal ranking of the main categories. We argue that this mismatch is probably based on one of the two following reasons: (1) The survey respondents view of what the main categories include is highly subjective and therefore will have very different meanings from person to person, while the more narrowed sub categories are harder to misinterpret and thus easier to link to its capability of enabling business agility. (2) The survey respondents have totally misunderstood the meaning of the sub categories. Due to the fact that we have tested the survey in accordance with established survey methodology, the former reason is probably more likely. Anyhow, in the aggregated result, corporate foresight was found to be slightly more important than the other main categories. When instead looking at the internal ranking, having a culture of change was seen as the most essential enabler of business agility. Although we have chosen the aggregated result to include in the framework (since it is better aligned with the rest of the framework, which has been further explained in chapter 8.1), the ranking result shows that having a culture of change is thought to be highly important, and the difference between the two results regarding culture of change might be based on the difficulties in managerial efforts focusing on culture.

Furthermore, in the survey, internal aspects was found to be rated more important as business agility enablers that those categories that were linked to exposing the organization (and the knowledge within) to external parts. We have not found such differences in the earlier research on business agility. This finding is highly interesting, but it is hard to draw any definite conclusions from it based on the theoretical and empirical study we have conducted. One possible reason for this difference in perceptions might be due to the fact that managers tend to be risk aversive, and an external exposure is clearly linked to higher risk than the internal efforts.

Another interesting finding is that the survey respondents were not found to be reluctant towards outsourcing of non-core IT, and saw this as an important part for achieving business agility. This is strengthening current theory (e.g. Cross, 1995). One can fairly assume that many organizations do not have IT as their core business (certainly not within all the different aspects included in the comprehensive term IT). Due to the fact that many of the sub categories outside the IT main category are in some way closely linked to IT, this finding implies that if organizations become more aware of the importance of being agile, they will most likely engage in IT outsourcing efforts. The "business agility paradigm" will thus generate lots of new business opportunities for those IT consultancy firms that try to map business agility to their IT services and products.

The answer to the first research question, "which are the most relevant enablers of business agility that can be used in a business agility assessment framework?", is given by the derived framework, and includes all the categories within it (see figure 9). The business

agility framework presented in this report is constructed to be generic, not industry specific. Since all of the business agility enablers derived from the interview sessions got high results in the subsequent survey, answered by a diversified set of respondents, it seems likely that the derived framework can be seen rather generically applicable to most industries. It is also discussed in this report that the weights can be set to be industry specific in order to be even more accurate for that specific industry. Furthermore, the answer to the third research question, "how can these enablers be weighted?", is also presented in the framework, and in table 5 the relative weights of all sub categories are presented.

10.2 Managerial Implications

The business agility framework presented in this report can provide managers and business consultants with some important topics to focus on when creating a more agile organization. Although some factors that are affecting business agility can be very contextual, this framework provides topics that are found to be relevant in most types of industries, and is at a highly strategic level. Based on our findings, we have come to realize that it is extremely important for organizations to be agile, and we argue therefore that an assessment of the agility level should be made on a frequently basis. Just as Peder Zetterberg stated; "what is not measured within an organization does not exist". The assessment must of course not include all main categories every single time.

We argue that the business agility assessment process should include a quantitative survey with questions related to the categories. After the data is gathered and analyzed, the results should be used to start relevant discussions in a following workshop, with the aim of further investigating more qualitative issues. If additional information is needed, new workshops or other observations at the client should be conducted. The results could then be calculated using fuzzy logic (see example in chapter 9.1.1) to obtain a level of business agility for each sub category, main category, and the overall total.

As argued in our findings, when implementing a change in an organization it is important to understand the complexity of the change process in order to succeed. Although the evaluation of change management implications is outside the scope of this study, we argue that it is vital for managers and consultants to understand the change management process and to have a change management team at place when engaging in business agility efforts.

10.3 Further Research

A suggestion for further research is to make a more thorough investigation of the importance for the different inputs in our framework in relation to different contexts (e.g.

branch, level of technology, size of organization). Just as stated previously, this will help in improving the business agility framework.

Another interesting area for further research is on why the internal categories (internal information sharing through IT, and internal cross-functional collaboration) were seen to be of higher importance for business agility than some of the external categories (external information sharing through IT, and different types of external collaborations). It would be interesting to find out if the internal factors actually are more important, or if this result is biased due to an aversion towards the risk related with sharing of knowledge with external parts.

"you better start swimmin' or you'll sink like a stone,
for the times they are a-changin' " - Bob Dylan

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Appendix 1 – Internet Survey (translated from Swedish)

Master's thesis in Industrial Management, KTH – Business Agility

We ask you to answer the following questions regarding what significance the different factors have for the ability of your organization to rapidly detect changes and be able to adapt to them when it is necessary.

Answer on a scale of 1 - 7, where 1 means that the factor is missing significance and 7 means that the factor is crucial for agility in the organization. 4 means that the factor is of equal importance as most of the other factors in your organization.

Corporate Forecasting

1. That trends in customer behavior is actively analyzed
2. That trends of the competition is actively analyzed
3. That trends in technology development is actively analyzed
4. That changes in the marketplace where the meeting with customers occurs is actively analyzed
5. That trends in social factors is actively analyzed

Internal & External Collaboration

6. That you have internal cross-functional collaborations within your organization
7. That you have external knowledge sharing network
8. That you have external partnerships
9. That you are outsourcing the processes that others can do as well or better

Culture of Change

10. That everyone in the organization understands why change is important
11. That the staff come from a diverse background
12. That an incentive system that promotes a willingness to change used
13. That there is an endeavor that everyone is working with continuous improvements
14. That continuous knowledge enhancing investments are made

Information Technology (IT)

15. To outsource the IT (hardware, such as software) are not related to core business
16. To have standardized IT systems that enable integration
17. To have an functioning system for internal information sharing
18. To have an functioning system of external information sharing (for example with suppliers and customers)
19. To use of business intelligence to analyze data about operations and the outside world

Organizational Factors

20. To actively work to minimize the fixed operating costs
21. Having a decentralized decision-making process
22. To have a low degree of formalization within the organization
23. To have low structural complexity within the organization

Ranking

Rank each of the following factors regarding an organization's ability to quickly switch to meet changes (where 1 is most important 5 is least important)

24. Corporate Foresight
25. Internal & External Collaboration
26. Culture of Change
27. Information Technology (IT)
28. Organizational Factors

Final Questions

29. What is your job title?

    _____

30. Is the organization you work within active only in Sweden, or International?

    Sweden ( ) International ( )

31. How much did the organization you work in grew in the past year?

    0-5% ( ) 5-10% ( ) 11-15% ( ) 16+ % ( )

32. Do you work B2B (business to business) or B2C (business to consumer) or a mix of the two?

    B2B ( ) B2C ( ) Mix ( )

33. In what industry operates the company you work in?

    Service ( ) Manufacturing ( ) Other ( )

34. Are you in the management team of the company you currently work in?

    Yes ( ) No ( )

Thank you for your participation!

Appendix 2 – Survey Results

Main Category	Mean value (1-7)	Stdev.
Corporate Foresight	5,54	1,12
Internal & External Collaboration	5,29	1,32
Culture of Change	5,04	1,23
Information Technology (IT)	5,17	1,40
Organizational Factors	4,95	1,41

Sub Category	Mean value (1-7)	Stdev.
Market	5,63	0,98
Competition	5,63	0,94
Customer Requirements	6,03	1,03
Technology	5,38	0,87
Social Factors	5,06	1,50
Internal Cross-functional Collaborations	6,04	1,04
External Knowledge Sharing	5,03	1,33
Partnerships	5,28	1,35
Outsourcing	4,81	1,45
Understanding of Why Change is Necessary	5,31	1,20
Diversity	4,81	1,33
Incentive Systems	4,53	1,24
Mindset of Continuous Improvements	5,34	1,29
Knowledge Enhancing Investments	5,22	1,24
Outsourcing	5,03	1,38
Standardized Systems	5,50	1,02
Internal Information Sharing Platform	5,63	1,07
External Information Sharing Platform	4,66	1,33
Business Intelligence Systems	5,03	1,60
Minimization of Fixed Operational Costs	5,53	1,29
Decentralized Decision Making	5,31	1,00
Low Complexity	4,66	1,38
Low Formalization	4,28	1,44