Master Degree Project in Innovation and Industrial Management

Improving Business Excellence in the Business Process

A single case study focusing on processes and people

Anna Jarskär and Anna Stiblert

This master thesis is written at the School of Business, Economics and Law, Gothenburg University, within the master programme M.Sc. in Innovation and Industrial Management. The authors are responsible for opinions, conclusions and results in this thesis. All rights are reserved.

Supervisor: Rick Middle
Credits: 30 hp

Postal address:	Visiting address:	Phone/email
P.O Box 600	Vasagatan 1	+46 31 786 00 00 (switchboard)
SE 405 30 Gothenburg	SE 411 24 Gothenburg	+46 31 786 49 48 (reception)
Sweden	Sweden	info@handels.gu.se

Abstract

Background: Business Excellence (BE) frameworks have become increasingly popular in the endeavour for superior business performance and strengthened competitiveness. For BE efforts to prove useful it is important to consider both company processes and the people working in an organisation. SKF Actuation System is a business unit that has implemented BE, but is currently struggling to realise the benefits of the BE efforts.

Research Question: How can SKF Actuation System improve Business Excellence in its business process, viewed from the perspective of the "Finance" function, with regards to aspects of processes and people?

Methodology: The research was qualitative, and carried out as a single case study. The research approach was mainly inductive with some iterative influences. The data was gathered from semi-structured interviews, observations and documents, and the findings were analysed using a flowchart and thematic analysis.

Findings: There is insufficient understanding of the business process among the employees, although many people stress that it is important to have a holistic understanding of the business process. Documented work descriptions are often missing and areas of responsibility are sometimes not clearly defined. Information sharing has improved after a re-organisation, but can still be improved. Many employees focus on short-term problem solving instead of attempting to find the root cause of problems.

Conclusion: In order to improve BE, enhanced understanding of the business process is needed. This will allow employees to better understand how activities are connected. It is also important that the business process is measured and followed up in more detail. Furthermore, tasks and roles need to be standardised, clarifying what tasks should be carried out by whom. This will provide a basis for improvements. Employee empowerment and involvement should be addressed in order to increase employees' motivation and commitment to tasks and problem solving. Finally, the organisation must improve the collaboration within and between its business lines in order to achieve BE.

Key words: Business Excellence, Total Quality Management, Business Process Management, Standardisation, Employee Involvement, Employee Empowerment, Boundary Spanning, Manufacturing Company, Finance, Flowcharting, Case Study

Acknowledgements

The master thesis has required a lot of time and hard work, and we would like to express our appreciation for all the people who have made it possible for us to conduct this research.

We especially want to thank SKF Actuation System for presenting us with this interesting research opportunity. We want to thank everyone working at the business unit for their input and interest in our work. Your openness and willingness to share information made it possible for us to gain a better understanding of the business process. Thank you very much to our supervisor at SKF, Navi Gill, who provided us with useful information and encouraged us to challenge ourselves to perform at a higher level.

We would also like to thank our supervisor at the School of Business, Economics and Law, Rick Middle, for all his guidance during our work with the thesis. Thank you for your thoughtful comments and guidance during the work, both with regards to the work on the academic report and the work for SKF. We appreciate that you encouraged us to have a business focused approach, which allowed us to provide useful input to the case company.

Last but not least, we would also like to thank our family and friends for their support during our work with the master thesis.

Anna Stiblert and Anna Jarskär

Table of Content

List of Tables

List of Figures

List of Appendix

List of Acronyms

BE	Business Excellence
BEM(s)	Business Excellence Model(s)
BPM	Business Process Management
EFQM	European Foundation for Quality Management
ERP	Enterprise Resource Planning
KPI	Key Performance Indicator
MBNQA	Malcolm Baldrige National Quality Award
TQM	Total Quality Management

Company Acronyms

BP(s)	Broken Promise(s)
CO	Customer Order
DO	Distribution Order
L&AT	Linear and Actuation Technology
MO	Manufacturing Order
MU	Manufacturing Unit
PO	Purchase Order
SU	Sales Unit

1 Introduction

In this chapter the research is introduced. The chapter covers the background of Business Excellence and the case company, before stating the research problem. The research problem provides the basis for the formulation of the thesis' purpose and research question. Before continuing with the thesis, some clarifications will be made. The scope and delimitations of the thesis will be stated, and some definitions clarified. Finally, an overview of the remaining chapters is provided.

1.1 Background

The industrial development of the 21st century suggests that a more competitive, demanding and fast paced international business environment is unfolding (Dahlman, 2007). The intense landscape increases the pressure on companies to strengthen their competitiveness (Nickell, 1996) through optimising the internal environment and invigorating external relations (Dahlman, 2007). The efforts to excel must occur continuously as "best practises" of yesterday quickly become mainstream and common practise (EFQM, 2016a). Companies' efforts to establish an advantage over its competitors have boosted the development, and increased popularity of quality frameworks such as Total Quality Management (TQM) and Business Excellence (BE) (Adebanjo, 2001).

The concept of BE has become increasingly popular, superseding more traditional quality management principles as the primary focus of management quality efforts (Adebanjo, 2001). According to Adebanjo (2001) BE is concerned with achieving superior business performance through outstanding practises. BE frameworks guide organisational improvements and help companies to excel along a performance curve, peaking when the organisation manages to deliver world-class results. At this level, organisations have managed to evolve by taking control over operations and building on best practises (Porter and Tanner, 2004).

Companies' pursuit of excellence has resulted in the establishment of different BE frameworks (Adebanjo, 2001), the European Foundation for Quality Management (EFQM) and the Malcom Baldridge National Quality Award (MBNQA) being among the most prominent Business Excellence Models (BEMs) (Asif and Gouthier, 2014).

The EFQM model is structured around nine model criteria, of which five are enablers and four are results. The enablers are necessary aspects of a business that should be addressed in order to facilitate results and consist of: "leadership", "people", "strategy", "partnerships and resources", "processes, products and services". The results, on the other hand, are what an organisation achieves in line with strategic goals. The results are divided according to what is important to different stakeholders, and consist of the following four categories: "people results", "customer results", "society results" and "business results" (EFQM, 2016b).

The MBNQA model has many similarities to EFQM, and consists of an integrated framework including six different approach categories and one result category. The approach categories include: "leadership", "strategic planning", "customer and market focus", "measurement, analysis, and knowledge management", "workforce focus" and "process management". The result category focuses on "business results" (Baldrige Performance Excellence Program, 2015). Bou-Llusar et al (2009) investigated the differences between the BE-models and found that

MBNQA award system addresses continuous improvement more straightforward than EFQM, whereas EFQM considers external relationships and resources to a larger extent.

The concept of BE is primarily originated from the concept of TQM (Adebanjo, 2001). Miller (1996) define TQM as an ongoing process, enabling organisations to establish and achieve standards that meet or outperform customer expectations and needs, both internally and externally. Thus, TQM aids organisations in achieving higher effectiveness, flexibility and competitiveness (Ho and Fung, 1994). TQM has proven to be more than just a trend (Williams et al., 2003) and the comprehensible framework behind TQM makes it a reliable tool in guiding companies on their way towards excellence (Al-Khalifa and Aspinwall, 2008). Some claim that TQM and BE are essentially the same thing, the main difference being the change of wording from "quality" to "excellence" as the latter is considered more fashionable (Adebanjo, 2001; Klefsjö et al., 2008). With many similarities between BE's and TQM's core concepts it is also relevant to include TQM frameworks when addressing BE (Bou-Llusar et al., 2009).

When assessing BE both "hard" and "soft" aspects should be taken into account. Gadenne and Sharma (2009) found that improved overall performance is favoured by efforts combining "hard" and "soft" TQM factors. The "soft" factors are more intangible, whereas "hard" factors are system-oriented and used to support the implementation of "soft" factors. Examples of "hard" factors include: information and performance measurements, efficiency improvements, and process management. Soft factors include: empowerment, communication and quality culture. When implementing a BE model it is important to consider enablers such as people and process enablers simultaneously as there is a clear positive relationship between the two (Gomez, 2011), i.e. managing people is critical in order to have outstanding processes, which in turn impact the business results (Eskildsen and Kanji, 1998). Taking action to improve people and process enablers is further motivated by a direct link between efforts taken and results, especially with regards to the people category (Hossein et al, 2012; Eskildsen and Dahlgaard, 2000).

Understanding the current situation provides an essential basis on which to improve an organisation (Marksberry et al., 2011) as a solid understanding of the current business is necessary when applying BE (Van de Ven and Johanson, 2006). In the strife for BE it is vital to understand current business processes, including manufacturing and support processes (Lee and Dale, 1994; Zairi, 1997; Harrington, 1995) and both BE concepts, EFQM and MBNQA, focus extensively on processes (Lee and Dale, 1994). In improving an organisation's quality and performance, managers using TQM must focus on process analysis in order to understand the activities carried out and how these are interlinked (Dean and Bowen, 1994). The linkages are important as horizontal linkages between activities provide customer focus (Zairi, 1997). It is also important to ensure all employees' involvement in the quality work in order to eliminate waste and reduce failure costs in the organisation (Ho and Fung, 1994). BE models are well suited for quality efforts in manufacturing companies (Gomez, 2011) and the concept has been adopted by the Swedish business group SKF (SKF 2012).

1.2 Company Background

This master thesis has been conducted at SKF Actuation System, a business unit within SKF. SKF is a Swedish manufacturing company with international presence, established in 1907 (SKF, 2016a; SKF, 2016b). The company is structured around three main business areas: Industrial Market, Automotive Market and Specialty Business. The main business focuses on bearings, but the company also develops and manufactures other industrial products within the areas of for example linear motion and actuation technology (SKF, 2016b). Within the area of Linear and

Actuation Technology (LAT) is a business unit named SKF Actuation System, located in Gothenburg. As indicated by the name, the unit develops and manufactures actuators. For some time now there has been intensified competition with regards to manufacturing and selling actuators. In order to be able to conduct operations the unit contains all major business functions, except for a sales function. After a reorganisation in 2015 the business unit abandoned its functional organisational structure in favour of a structure centred on three business lines: Industrial Specials, Automotive & Standard, and Systemhouse.

The business group has developed "SKF Business Excellence", which has been implemented at SKF Actuation System and other SKF business units. The framework provides guidelines on how to assure quality throughout the value chain. SKF's BE initiative includes aspects from TQM, EFQM and MBNQA, combining both "hard" and "soft" TQM factors as it takes both processes and people into consideration, and the concept is applicable to both manufacturing and back-office processes. The concept includes five key principles guiding the work towards BE (Figure 1) (SKF, 2012):

- Standardised Work
- Right from Me
- We Care
- Customer Value Driven Output
- Continuous Improvements

The convergences between SKF's BE and EFQM and MBNQA is shown in the correspondence between SKF's two principles "Standardised Work" and "Continuous Improvements" and BEMs' assessment of processes, as well as SKF's "Right from Me's" similarities to BEMs' people aspects (Appendix A).

SKF Actuation System is currently struggling to realise the benefits of SKF's BE efforts. The business process is presently resulting in many problems for "Finance", a business function active at the end of the business process. Solving the problems requires involvement from other functions and is consuming resources. Many of the problems result from errors earlier in the process, but the cause is seldom self-evident, and the reasons for the errors could be associated with procedures in the business process or employees' behaviour. There is currently no process overview and the business unit needs a better understanding of the situation and how it can improve its BE efforts.

Figure 1. SKF Bridge of Business Excellence

1.3 Research Problem

SKF Actuation System does not know how to improve its BE efforts. Without that knowledge the unit cannot realise the benefits associated with the concept of BE. Faced with increased competition SKF Actuation System must improve its business in order to sustain and improve its competitiveness. If the business unit does not manage to implement BE it risks throwing away opportunities to make its processes more efficient and reliable. The unit also risks not having the same opportunities to come to terms with existing problems in the business process. An unchanged or escalating development could severely damage relations both internally and externally.

SKF Actuation System does not know why problems in the process occur, and how activities are interlinked. Little knowledge about linkages makes it difficult to understand the causes of problems appearing at the end of the business process, which in turn complicate addressing the problems and improving BE.

Without knowing the causes of problems it is not clear what aspects of BE that could prevent the problems in the business process from occurring. There could be several aspects of BE that are not in place, and these could refer to both processes and people. Addressing one aspect at a time would most likely not provide enough insight into the current situation and required actions, as it is suggested that there may be different causes to existing problems. Also, processes and people are closely interlinked. Without knowledge of the present situation, improvements are likely to fail.

Concluding the problem at hand, SKF Actuation System must gain an understanding of how it can improve its BE, and when gaining insight into the business' current situation and required actions, both processes and employees should be considered. An overall perspective can be facilitated through considering how different functions' activities are interlinked, causing problems for "Finance" in the end of the process. This guides the purpose of this thesis and the research question.

1.4 Purpose

The purpose of the thesis is to create an understanding of how BE can be improved at the business unit investigated, from the perspective of the "Finance" function. The research aims to provide the case company with recommendations on how to enhance SKF Actuation System's BE efforts. This requires a deep understanding of the current situation. In order to provide recommendations, the current business process and linkages of activities, as well as existing practises with regards to processes and people, will be described. The thesis will also serve to provide insight into how well theory is applicable to reality, when it comes to explaining problems related to a company's BE efforts.

1.5 Research Question

The following research question has been formulated (Figure 2) in order to guide the assessment of how BE can be improved at SKF Actuation System:

How can SKF Actuation System improve Business Excellence in its business process, viewed from the perspective of the "Finance" function, with regards to aspects of processes and people?
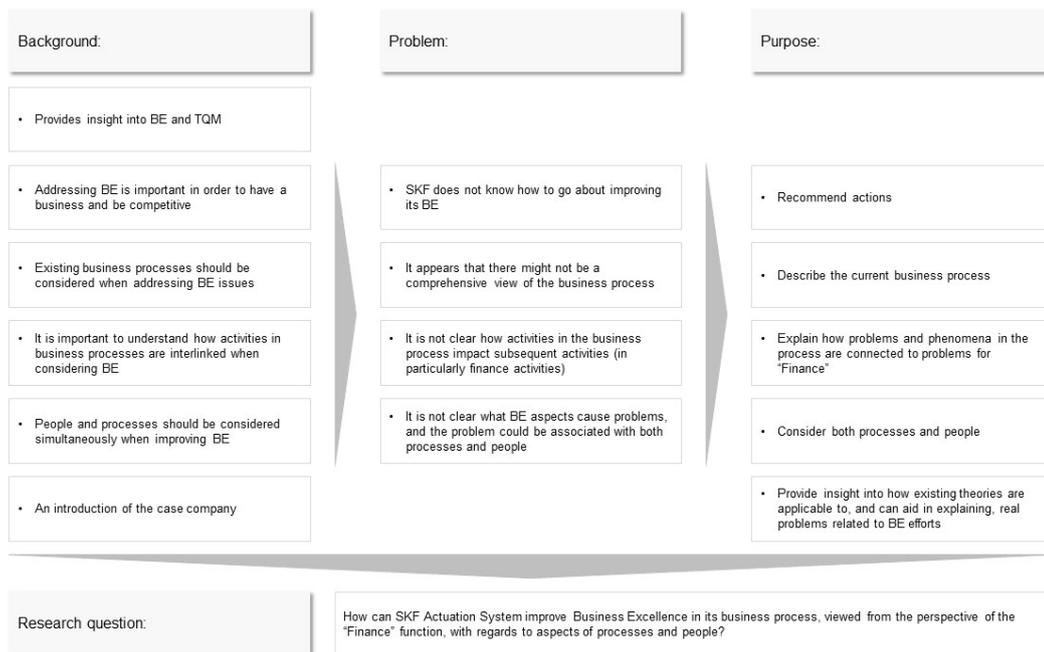
Figure 2. The process to formulate the research question

1.6 Scope and Delimitations

The broad subject that BE makes up requires delimitations to be made. The research can also benefit from a clarification of the research scope. These are accounted for below.

The focus of the study is on the overall internal business process, from a customer enquiry to cash, viewed from the perspective of the "Finance" function. The focus is not on improving the production stage. Therefore, production will only be accounted for based on its impact on the process from the perspective of the "Finance" function, and the main focus will be on the back-office activities. Further, the thesis will not explicitly account for BE related to suppliers and/or customers, but only mention the two when they impact on the internal processes. For the same reason, the invoicing and matching of invoices to orders are considered part of "Finance's" work, even if these activities are outsourced. They are considered to have significant impacts on the internal work at the unit and to relate to BE aspects of the business process.

The research focuses on some aspects of BE in order to provide a deeper understanding of these areas. In addition to the overall process, the focus areas within processes and people are: standardisation, measurements, involvement and empowerment, and information exchange within the business unit. These delimitations were determined based on the findings from a pre-study, identifying areas of interest to investigate further. The focus on employees does not include management.

1.7 Clarification of Definitions

In this paragraph some definitions used in the thesis are clarified. The business unit SKF Actuation System is also referred to as the manufacturing unit (MU) within SKF, the organisation, the case company or simply the unit. The process from customer enquiry to cash is

referred to as: process, business process and value chain, all referring to the same process. A the Considering the business process from the perspective of the "Finance" function means that problems and phenomena in the business process (related to BE) are related to "Finance's" work at the end of the business process, illustrating how problems associated with BE impact "Finance's" work.

1.8 Disposition

In the next chapter the theoretical framework is covered, accounting for areas of interest related to BE, processes and people. The theoretical framework provides important understanding of concepts and aspects discussed later in the research. Following the theoretical framework the methodology used in the research is explained, including an account of the research approach and design, the different methods used for data collection and how the analysis of the findings was performed (chapter 3). The findings from the business unit are accounted for in chapter 4 and 5, before they are contrasted against the theoretical framework in the discussion (chapter 6). Finally, the conclusions from the study and the recommendations for the case company are provided, followed by suggestions for future research (chapter 7).

2 Theoretical Framework

In this chapter the theoretical framework with regard to BE will be accounted for. First quality concepts will be introduced in order provide a better understanding of BE. Then the concept of BE will be expanded upon, by focusing on aspects of processes and people. The aspects of interest are based upon the findings from the pre-study and accounted for in the delimitations of the study.

2.1 Business Excellence

BE is about achieving organisational excellence through outstanding practises (Adebanjo, 2001). In the pursuit of excellence the concept serves to provide organisations with guidance on how to achieve excellence and business success (Enquist et al., 2015). Competitive quality is implementing and improving systemic transformations, in order to provide efficient and outstanding outcome for a wide range of stakeholders (Lengnick-Hall, 1996). In the last two decades, TQM and BEMs have become the most popular concepts, among a range of new approaches, to enhance management capabilities and improve businesses (Dahlgaard et al., 2013). Some claim that BE is a broader concept than TQM, addressing all major stakeholders instead of focusing solely on providing customer satisfaction (Bergman and Klefsjö, 2010), whereas many describe BE and TQM as essentially the same thing (Adebanjo, 2001; Klefsjö et al., 2008), and treat BE as synonymous with TQM (Dahlgaard et al., 2013). This makes TQM frameworks highly relevant when addressing BE (Bou-Llusar et al., 2009).

Strong competition and a dynamic business environment have increased companies' interest in quality as an essential part of being successful (Lengnick-Hall, 1996), and most large firms have adopted TQM practises in some fashion (Powell, 1995). According to Samson and Terziovski (1999) a highly competitive environment has caused many manufacturing managers to re-evaluate their businesses and implement TQM, in order to improve organisational performance. Still, TQM has developed beyond its industrial roots, and the concept is now being applied to a wide range of industries and activities, not always associated with manufacturing (Tuckman, 1994; Hackman and Wageman, 1995).

Companies pursuit of BE has resulted in the development of many BE concepts, the most distinguished ones being EFQM and MBNQA (Adebanjo, 2001). There are also several national adoptions of BEMs, such as the Swedish Institute for Quality (SIQ). The models' main criteria are presented in the table below, Table 1. A comparison of the criteria show that there are many similarities between the models, but also some differences (Enquist et al., 2015). The concepts promote self-assessment in order to determine organisational strengths and improvement areas, and the assessments can be carried out by the organisation and/or a third party. During the assessments the criteria are assessed by considering different aspects of the business (ibid). The BEMs have quality awards that are rewarded to companies who perform well according to the BEMs' criteria (Adebanjo, 2001).

Table 1. The main BE frameworks' criteria (Enquist et al., 2015)

	EFQM	MBNQA	SIQ
Criteria (main)	Leadership Strategic planning Customer focus Measurement, analysis and knowledge management Workforce focus Operations focus Results	Leadership Strategy People Partnerships and resources Processes, products and services Customer results People results Society results Business results	Leadership Information and analysis Strategic planning Employee development, involvement and participation Processes Results Customer satisfaction

Much similar, TQM implies focus on customers, assessing processes, informed decision-making, committed employees, continuous improvements and management commitment (Bergman and Klefsjö, 2010). Daahlgard et al (2002) explain TQM as the implementation and understanding of quality management principles in every aspect of the business and its activities. It also reaches beyond the own organisation, to include close collaboration with suppliers. Bergman and Klefsjö (2010) treats TQM's main aspects as cornerstones when addressing quality management in organisations.

Pavett and Whitney (1998) claim that TQM is both a toolbox and a philosophy. High quality can provide and sustain competitive advantage, but implementing techniques and tools are not enough. They have to be accompanied by a shift in the beliefs, assumptions and premises that guide the organisational activities (Lengnick-Hall, 1996). An important part of TQM is challenging existing practises (Tuckman, 1994). TQM is based on several assumptions. One assumption is that the cost of poor quality is greater than that of developing processes that produce high quality. In essence, a company will perform better if it supplies high qualitative products (Hackman and Wageman, 1995). Another assumption that TQM is based on is that quality is ultimately management's responsibility, as management determines the design of the organisational systems. The systems in place determine employees' effectiveness (ibid).

The implementation of TQM/BE addresses different costs in organisations, including the four categories of cost of poor quality. "Internal failure costs" concern costs associated with defects found within the organisation. "External failure costs" are costs associated with defects found outside of the company, by customers. There are also appraisal and prevention costs. "Appraisal costs" are costs for deciding how well products conform to quality requirements, and "prevention costs" are associated with keeping failure and appraisal costs to a minimum. The definitions should be tailored to suit different companies. Traditionally, the costs of poor quality have been associated with manufacturing, but the concept has been broadened to include any business activity. This means that any costs associated with work being discarded, or re-work having to take place, are considered costs of poor quality (Juran, 1988).

There are many reasons for implementing BEMs/TQM. Implementing TQM practises will lead to higher organisational performance (Samson and Terziovski, 1999). Implementing BEMs and assessing the business provide stronger focus on improvement work and on processes, committed leadership, organisational participation and well informed decision making, based on facts (Enquist et al. 2015). The main criticism raised is that the efforts are time-consuming and costly. The financial impacts of TQM initiatives have been debated, and many studies have attempted to

bring clarity to the matter. Several studies have been performed on the financial impact from the implementation of BEMs/TQM.

2.1.1 BEMs/TQM Impact

Implementing BEMs/TQM in businesses can result in both financial and non-financial impact (Dahlgaard et al., 2013). Samson and Terziovski (1999) found that TQM's has significant positive impact on organisational performance, but there are differences between industries. Manufacturing organisations tend to perform better when TQM is implemented in the organisation, compared to when it is not. Better performance is related to: employee relations, customer satisfaction, operational performance and business performance.

Hendricks and Singhal (1997) found that there are strong evidence that quality award-winning companies outperform a control sample, considering operating income measurements. This indicates that the implementation of quality concepts, such as TQM/BE improves operating performance. Another important finding is that there are insignificant changes in operating-income measures during the implementation phase, meaning that costs associated with the implementation of TQM might be accompanied by some early benefits from the initiatives, outweighing some of the implementation costs. Operating income mainly improved in the period following the quality award, and there were also evidence that award-winners performed better in terms of sales. Yet, the authors found little evidence that the award-winning companies managed to control costs better than the control group (Hendricks and Singhal, 1997).

Boulter et al. (2013) found that companies implementing excellence frameworks experience greater financial development than companies not making the effort. They investigated the financial impacts from successful implementation of BEMs/TQM, by comparing the financial figures of quality award winning companies and a control group. Companies that have implemented a BE/TQM approach outperform other firms during a period of three consecutive years, after having won their first quality award. This is shown by for example comparing sales figures. Companies that successfully implement BEMs/TQM experience 8 % more in sales, compared to non-award winners, in the first year after having received a reward, and this figure rises to 17 % in three years. The award winners also outperform many market indexes for a short period of time after the reward, further indicating that there are financial benefits to implementing BEMs/TQM. The investigation of cost management shows that companies awarded for their quality efforts better control costs, than companies in a control group, in the five year post-implementation period following their award. The costs of primary focus in the investigation were cost of goods sold (COGS) and sales costs. They (ibid) also found that the number of employees in the award-winning companies declined after having received the award, indicating that the same work could be carried out with a smaller number of employees.

2.2 Process Management

An important part of TQM is to improve all types of processes at all times, such as planning, production and service processes (Dahlgaard et al., 2002; Zairi, 1997). In order to deliver high quality throughout a business process there needs to be a clear understanding of the whole process (Lohrmann and Reichert, 2013) and how activities in the business are interlinked (Dean and Bowen, 1994). In connection to BE, processes and activities can be improved through applying a number of different concepts for addressing business processes (Lee and Dale, 1998).

2.2.1 Business Processes

A business process starts with an external activity, typically a customer placing an order, and is thereafter defined by activities carried out in a specific order serving to deliver the finished goods to the customer. The main business process in a company can be divided into different sub-processes where the main activities included in the sub-processes are explained in more detail. (Kirchmer, 2011) Similarly, Zairi (1997) defines a business process as input transformed into output through a reliable and consistent flow made up by different activities, using the organisation's resources.

When improving processes is important to consider all business processes, both manufacturing and service processes (Lee and Dale, 1994). High quality processes require integration between administrative (financial) processes, and manufacturing and logistical processes. Quality management limited to production is simply not enough. There needs to be close integration of functions and continuous development of the process in order to deliver high quality throughout the business process (Lohrmann and Reichert, 2013). One concept used for addressing business processes is business process management (BPM) (Llewellyn and Armistead, 2000).

2.2.2 Business Process Management

BEMs focus extensively on processes (Lee and Dale, 1994), and BE and BPM are closely interlinked. BPM has emerged from TQM as a concept for addressing processes (Llewellyn and Armistead, 2000).

BPM provides a holistic understanding of processes in a company (Kirchmer, 2011). Although there are many different definitions for BPM, there are some recurring descriptions of the concept. The descriptions can be summarised as follows: BPM is about improving business processes and business performance, and the efforts can take place with or without focus on technology solutions (Jeston and Nelis, 2014). The concept of BPM provides a structured approach to analysing and improving business activities. BPM is not only used for addressing manufacturing processes, but also activities such as marketing, communication and other business activities (Zairi, 1997).

Defining the business process, the boundaries of the process, the process owner and how to measure the process are important parts of BPM (Harrington, 1995). In order to excel in BPM and apply continuous improvements, comprehensive definitions and flowcharting are deemed essential (Lee and Dale, 1998). With BPM, an organisation maps and documents the main activities. Through the documented activities the organisation can ensure that processes are consistent and continuously deliver high quality as well as ensure that the processes focus on creating value for the customer through the activities that are carried out. The mapping and documentation of major activities and procedures help to ensure discipline and consistency in the quality performance, and that the performance can be repeated (Zairi, 1997). The information can be analysed through the use of a flowchart (Harrington, 1995; EFQM, 2016c) and thereby enable the identification of potential problems in the process and take care of quick fixes immediately. The flowchart is also useful when continuously improving a company's processes (Harrington, 1995). There is however a great variation in how well processes are documented within companies and BPM principles are often applied randomly across organisations (Lee and Dale, 1998).

There are difficulties associated with processes and BPM. In BPM understanding the main processes is essential (Lee and Dale, 1998). Even so, Lee and Dale (1998) found that a sufficient

understanding of processes is often lacking within companies. Employees were found to be internally focused and organisations functioned as small units and were not truly cross-functional. Edson and Shannahan (1991) explain that functional boundaries provide obstacles to customer satisfaction. These soft spots can damage organisational communication and be subject to employee "turf mentality". Process driven approaches can help in overcoming these obstacles, establishing customer driven processes that go beyond organisational functions (Edson and Shannahan, 1991).

It is noteworthy that employees often have too little time to spend on improving and simplifying processes. The extent to which processes are improved depend upon individual employees and efforts are most often uncoordinated. (Lee and Dale, 1998)

One of the aims of BPM is to create a sense of belonging to the process among employees rather than different units inside the company, and processes can also be thought of as communities. (Llewellyn and Armistead, 2000). Clear processes can help businesses to deliver stakeholder value by clearly define the roles and the responsibilities in the process (EFQM, 2016c).

2.2.3 Measuring the Standardised Process

The use of performance measurements is encouraged within BEMs, as they make it possible to control and follow up on the performance of processes (EFQM, 2016c; Baldrige Performance Excellence Program, 2015; del-Rio Ortega et al., 2013). Measuring activities in relation to targets makes it easier for companies to focus organisational efforts and engage employees in problem solving and improvement work, improving processes and the organisation (Zairi, 1997). In addition to promoting performance indicators (EFQM, 2016c), quality standards are also encouraged when striving for excellence (Zairi, 1997). Zairi (1997) claim that quality standards, such as ISO9000, make up an important part of working with BPMs.

The concept of BPM is often used by management to plan, monitor and control business processes (Lohrmann and Reichert, 2013). Administrating methods, policies and management practises associated with the business processes, allows for continuous improvements of processes (Jeston and Nelis, 2014). Through measuring, and controlling the costs associated with operations, organisations can improve its efficiency and effectiveness. Another important part of ensuring quality in organisations' operations is to ensure that the daily work processes are carried out according to the requirements of key processes (Baldrige Performance Excellence Program, 2015).

Criticism associated with performance measurements has been issued. Lee and Dale (1998) found that often too many process measurements are used, and that the information within business units must be reduced to create better focus. The authors suggest a review of the number of measurements and the amount of information reported in order to limit it and avoid information overload. According to Glykas (2011) performance measurements are often too focused on financial and accounting information, which means that certain information is often lagging and that business processes are not assessed systematically.

2.2.4 Standardisation

For organisations to achieve consistency and make their process more efficient, a useful method is to standardise the process (Kirchmer, 2011). Organisations that strive for excellence must ensure consistency throughout the process with different employees conducting the work tasks in

the same way (Ungan, 2006). Standardisation benefits production processes as well as back-office and support-activities (Kirchmer, 2011).

The definitions and views of standardisation have changed over time. Today's paraphrase of standardisation puts it into an updated context of lean, where lean six sigma, TQM and ISO-based quality management systems all play important parts (Marksberry et al., 2011). Traditionally, standardisation has signified how to perform work, including what parts and tools to use and how to organise the work. Still, standardised work is considered "precise procedures for doing work" (ibid). Jang and Lee (1998) define standardisation as "the degree to which work rules, policies, and standard operating procedures are formalised and followed". Standardising work is concerned with aligning efforts. The work is carried out through documenting the current process, identifying waste and necessary improvements, implementing the efforts and documenting the improved process (Marksberry et al., 2011). Process documents are crucial for process standardisation, and procedures are standardised through documenting best practises, the optimal way of conducting a task. This can be accomplished through detailed documentation of how the employee with the best knowledge of how to perform a task, performs it in an efficient way. This has proved especially challenging when turning tacit knowledge into explicit knowledge, especially when the amount of details increase (Ungan, 2006).

Standardisation is essential in order to have continuous improvements (Toyota, 1998). According to Berger (1997) Imai Masaaki formulated the matter: "There can be no improvement where there are no standards". From the Toyota viewpoint standardisation is based on three essential components: takt time, working sequence and standard in-process stock (Toyota, 1998; LEI, 2008).

Standardised work provides a consistent way of working with step-by-step guidelines. With clear procedures for how to conduct work it is easier to discover problems in processes and resolve them (Toyota, 1998). Root causes of problems are found when reducing variability through standard procedures, and are eliminated through rewriting the standards to make sure that the problems do not recur. The documents of standardised procedures should therefore be updated continuously and not be seen as finished documents. It is therefore important that employees contribute to the updating of standardised documents dealing with their work tasks (Santos et al., 2002).

As previously stated, standardisation includes identifying and reducing different kinds of waste in order to increase the efficiency of the organisation. Waste is defined as activities that add costs to an organisation without adding value for the customer. The literature provides examples of seven kinds of waste that should be eliminated: over production, inventory, motion, defectiveness, transportation, over processing and waiting. Production should therefore be planned in order to eliminate wastes, i.e. unnecessary movements. By using a pull-system waste of inventory is eliminated and with a more efficient production, bottlenecks and work-in-process inventories are reduced (Chiarini, 2013). Reducing waste is therefore an important effect of standardisation but equally important to decreasing non-value adding activities is to increase those activities adding value to the business (Santos et al., 2002).

There are many benefits to standardisation. Benefits of standardised work are: documented processes, reduction in variability (errors), simplified training of new personnel and establishment of a baseline for improvement (LEI, 2008). Standardisation of procedures provide consistent quality for routine tasks and minimize uncertainty and variability. The stricter the procedures to be followed - the more motivated employees are to work efficiently and effectively (Hsieh et al. 2002). Decreased variability makes the quality, costs and times of the process more

consistent (Santos et al., 2002). Service quality also increases when standardising the work (Hsieh et al. 2002).

When tasks are performed the right way the first time they are carried out there can be considerable savings for companies (Tuckman, 1994). In a report by HM Treasury (2009) it becomes clear that there are massive savings to be made in association with optimising back office and IT functions. Even though many private companies are considered to be efficient in managing their back office functions, compared to government owned corporations, the report still illustrates the improvement potential that exists if the functions are not managed efficiently.

Even tough standardised tasks can help improve an organisation and make its processes more efficient employees must be committed for the organisation to benefit from the standardisation. The employees must know what their standardised tasks include and strive to work according to instructions. (Santos et al., 2002)

Standardisation implies that a company does not only standardise the activities carried out in the organisation but also standardise the roles of the employees. The organisation therefore sets up rules regarding what activities should be carried out by whom. An important part of standardising roles is formalisation, which implies investigating the roles of the employees and activities in the organisation, i.e. to what extent the procedures are documented. Another important part is configuration (Hinings et al., 1967). Pugh et al. (1968) and Hinings et al. (1967) define configuration as the shape of the role structure where each role is covered in a detailed and holistic way, preferably illustrated by an organisational chart.

2.2.5 Tacit and Explicit Knowledge

Knowledge can be both tacit and explicit. Tacit knowledge is understood without being expressed. It can be described as action-oriented knowledge that is based on practical experience and seldom openly expressed, i.e. a subjective form of knowledge. Tacit knowledge is made up by beliefs, values, perceptions, insights, assumptions, and mental models. Explicit knowledge exists on the other end of the knowledge spectra from tacit knowledge. This kind of knowledge is expressed formally in language, print or electronic media. It is often based on documents and clear work processes. Explicit knowledge is readily communicated and distributed. (Smith, 2001)

Nonaka (1991) explain that there are four main patterns for creating information in organisations. These patterns are: tacit to tacit, tacit to explicit, explicit to explicit, explicit to tacit. Knowledge that is kept tacit is transferred from one person to another through socialisation. The transfer can take place through observation, imitation and participation. Tacit to explicit implies expressing the inexpressible, though documenting knowledge and creating a new product. Explicit to explicit takes place when pieces of explicit knowledge is combined into a new product. Explicit to tacit occurs when explicit knowledge is reframed or interpreted to become new knowledge that is internalised by people.

It is necessary to balance both explicit and tacit knowledge in organisations. Tacit knowledge encourages innovative thinking, whereas explicit knowledge provides structure and clear directives in the processes. Explicit knowledge helps to make the working environment predictable. This is due to the tension that exists between processes, how things should be done, and practise, how things are actually done. The tension must be balanced in order to encourage innovative ideas, and harness them by implementing them in the existing structures. Too much structure (rigid processes) can hamper innovative thinking whereas too much practise and little structure may result in ideas that are not harnessed. (Brown and Dugid, 2000)

2.3 People

Pavett and Whitney (1998) state that both organisational systems and individual commitment are critical to the success of TQM initiatives. An important characteristic of TQM is the idea of cultural change in organisations, focusing efforts around commonly shared beliefs and values, i.e. quality. The importance of people, the softer factor of quality management, in achieving high performance is further emphasised by Escrig and Menezes (2015). When considering people aspects of BE, one of the most critical success factors is employee empowerment and involvement (Dubey, 2015). Furthermore, well-functioning internal cooperation and collaboration is essential in order to satisfy external customers (Vora, 2002).

2.3.1 Employee Empowerment and Involvement

An important part of BE, when assessing people, is to empower and encourage employees, communicate with them and reward the value they contribute with. By empowering employees, people should be encouraged to act by themselves and make their own decisions when needed to (EFQM, 2016d).

Employee involvement is positively correlated with TQM and influences how well TQM contributes to the business performance (Sun et al., 2000). TQM is based on the assumption that employees, by nature, care about delivering high quality and will take action to improve their own work. The only requirement is that the organisation supply tools and training (Hackman and Wageman, 1995). It is considered an important part of the TQM-culture to involve employees in business operations and hold them responsible for the quality in their work.

Thomas and Velthouse (1990) define employee empowerment as employee motivation to commit to work tasks. Hassan et al. (2016) put empowerment and participatory management on equal terms. Participation, or empowerment, means sharing the possibility to influence between employees who otherwise belong to different hierarchical levels of the organisation. Influence can be shared in problem-solving, decision-making and information-processing (Wagner, 1994).

While TQM foremost considers ways of improving quality, employee involvement includes not only quality improvement but also improving cost, speed and employee well-being (Lawler, 1994). Employees should not only solve daily problems but also engage themselves in continuous improvements by finding new ways to conduct their work in a more efficient way (Lawler, 1994). All should strive together to achieve quality, shifting the focus from firefighting to prevention (Tuckman, 1994). Employee involvement also aims to empower the employees to engage themselves in problem solving since it is believed that the person closest to the problem should be responsible for solving it, and has the right knowledge to improve the process. Given the responsibility the employees can participate in the operations in a more effective way by making decisions themselves (Sun et al., 2000).

Employee engagement and development are important parts of developing an organisation. What drives engagement, and how engagement is assessed within organisations, are important parts of MBNQA's "workforce engagement". So is how the company culture facilitates open communication and encourages employees to collaborate, in order to develop the organisation. (Baldridge Performance Excellence Program, 2015)

Faisal and Al-Esmael (2014) researched organisational commitment, referring to an individual's identification with and involvement in an organisation, and found that strong organisational commitment makes employees more motivated to achieve what the organisation expects, as well

as organisational goals. Faisal and Al-Esmael (2014) found ten enablers of organisational commitment: equity in paying salary and fringe benefits (organizational justice), perceived personal growth and development, job security, task variety, degree of autonomy, feedback on performance, task identity, job satisfaction, acceptance of organisational changes, and turnover intentions (intention to leave).

Positive experiences gained through tasks make up another motivational factor for employees. Tasks are assessed based on four constituent parts in order to understand what drives employee motivation: impact, competence, meaningfulness and choice. Impact refers to the degree of impact the task has on the environment when it is finished (making a difference). Competence assesses employees' skillfulness when conducting tasks and meaningfulness considers how well the goals of tasks correspond to employees' goals. If the goals correspond it is believed that employees will care more about doing a good job. Finally, choice is related to responsibility for actions. Perceived choice (self-determination) and autonomy increases employee motivation. When employees are motivated in their work they find purpose to act, either because of external or internal motivations, according to self-determination theories (Meyer, 2004).

Ryan and Deci (2000) explain employee motivation, development and well-being using self-determination theory. Self-determination theory assesses motivation and personal integration based on people's inner needs for personality development and self-regulating behaviour. The authors also identify self-determination with three different types of motivation: amotivation, extrinsic and intrinsic motivation. With amotivation the employees do not have an intent to act but simply conduct their daily tasks. Employees who are motivated through intrinsic motivation constantly seek challenges and enjoy carrying out their tasks. This kind of motivation is facilitated by feedback, evaluations and new challenges. The behaviour of employees motivated through extrinsic motivation can be explained by the motivation of a separable outcome of the task, rather than the task itself. Extrinsic motivation is more externally regulated compared to intrinsic motivation. Extrinsic motivation is therefore regulated through punishments and regulation but also self-control while intrinsic motivation is regulated through employees' own interest and enjoyment. (Ryan and Deci, 2000)

Brown (2013) found that it can be challenging for companies working to sustain BE to make sure that employees are committed in the strategic work of striving for excellence. In order to enhance employee engagement employees need to understand how strategies are relevant for them, and have the benefits of the strategies communicated to them. In order to be able to engage employees it is important to communicate both strategic- and operational plans, and encourage employees to speak their mind. It is furthermore important that employees are trained and encouraged to develop their skills, but training sessions should not take away too much time from their job assignments (Brown, 2013).

2.3.2 Boundary Spanning

The concept of boundary spanning explains how the transfer of information, knowledge and ideas can be facilitated across boundaries within and between organisations (Aldrich and Herker, 1977; Ulrich et al., 1993). Traditionally the concept has been concerned with structural and functional boundary spanning (Andersen and Kragh, 2015), but the concept has been broadened to include not only organisational boundaries, but also time-, horizontal-, vertical-, external- and geographic boundaries (Ulrich et al., 1993). Carrying out boundary spanning typically implies socialising between groups with different norms (Caldwell and O'Reilly III, 1982).

Hawkins and Rezazade (2012) define boundary spanning as a process consisting of four spanning mechanisms. These are made up by boundary practise, boundary discourse, boundary spanner and boundary object. The boundary practices encourage co-creation of knowledge in order to close knowledge gaps by involving employees from different functions in collective activities. The boundary discourse is the information and knowledge being shared, built and clarified in order to enable the transfer of the knowledge to other groups. The existing knowledge in organisations is part of both boundary spanners and boundary objects. The boundary spanner translates, and the object transforms, the knowledge. Boundary discourse and boundary practice are, on the other hand, concerned with creating new knowledge within the organisation. The spanning process integrates the different mechanisms in different ways to close knowledge gaps within an organisation by transforming knowledge between different groups.

There are different roles that employees in organisations can assume, related to boundary spanning. Mull and Jordan (2014) state that "Boundary spanners are communicators, protectors, innovators, and relationship managers". Tushman (1981) distinguishes between informal and representational boundary spanners. The first category gains informal power and status by participating in boundary spanning, whereas the second category has formal assignments and focus on resource acquisition and disposal. The formality of the latter results in less power and status than what informal boundary spanners gain (Tushman, 1981). Any effective boundary spanner is socially skilled, and according to Caldwell and O'Reilly III (1982) individuals must be sensitive to different social cues in order to carry out efficient boundary spanning. The better individuals are at perceiving and adjusting to different situations – the higher the job performance. High perceptiveness is more important for low-tenure employees, than for high-tenure employees, in order to perform well.

TQM relies on the assumption that organisations are systems made up by highly interdependent parts. This inevitably provides challenges when spanning across traditional functional boundaries. In order to achieve excellence an efficient organisation must have collaboration between functions (Hackman and Wageman, 1995).

Efficient boundary spanning provides organisations with many benefits. Collaborating across boundaries is important in order to be able to transfer practices and knowledge across borders. A problem in many large organisations is that employees do not help other business units, but are encouraged to focus intensively on their own tasks (Cross et al., 2015). Boundary spanning can create a more efficient organisation by improving the productivity and decision-making process. When collaborating the productivity is improved through streamlining processes and achieving economies of scale (ibid). Information trading across internal and external boundaries also improves the individual's performance. However, a risk of boundary-spanning collaboration is that some employees might face collaborative overload when many co-workers turn to them for advice (ibid). Considering the many benefits associated with boundary spanning, management should focus on establishing a knowledge integration structure that encourages information sharing (Teigland and Wasko, 2003).

There are several approaches to enhance knowledge sharing within companies. Informal organisational structures used for boundary spanning collaboration should be used as a complement to the formal organisation structure (Cross et al., 2015). To encourage boundary spanning activities (formal and informal), management must work to establish a climate where asking for assistance and providing expertise is acknowledged, valued and rewarded (Tushman, 1981). Quinn et al (1996) account for how technical systems provide connectivity that can enhance knowledge sharing in organisations, providing newly recruited with access to collective knowledge. Bonner (2000) suggests placing people who normally work together in proximity to

one another in order to enhance knowledge sharing. Further, Bonner (2000) claims that technical systems only serve their (knowledge-sharing) purpose if people communicate regularly at work in real life. In order to be successful, companies must redefine their processes to enhance knowledge sharing. Redefining processes includes being able to leverage the content from the processes (Wah, 1999). Wah (1999) stresses the importance of establishing a knowledge sharing culture. The key to knowledge sharing is interactive learning, where personnel continuously share what they learn with each other. Furthermore, it is important to establish a clear purpose of the boundary spanning collaboration to ensure the involvement of the employees (Cross et al., 2015). When improving boundary spanning, and functional work, it should be asked what the function's purpose is: why it exists and what it should perform (Juran, 1992).

2.4 Summary of Theoretical Framework

The key takeaways from the theoretical framework are summarised in the table below (Table 2). The takeaways are structured according to the main theories presented in the framework, and provide a basis for the continued assessment of the case company's BE efforts.

Table 2. Summary of the theoretical framework

Theoretical framework	Key takeaways
BE	• Frameworks guide the achievement of excellence • Organisational performance can be improves • Costs can be reduced
Processes	
Business processes	• It is important to have a holistic understanding of the company's processes • Mapping and documenting the process and its activities can improve the holistic understanding • Employees often have little time to improve processes
Measurements	• Measurements are used to plan, monitor and control processes • Processes should be assessed and measured in order to be improved (e.g. KPIs can be used) • Information is sometimes too focused on accounting, and lagging
Standardisation	• Tasks and procedures should be documented, and documents followed • Variability can be reduced and efficiency increased • Enables the identification and reduction of waste, reducing costs • There should be clear roles and responsibility areas
Tacit and explicit knowledge	• An organisation should balance tacit and explicit knowledge
People	
Empowerment and involvement	• Critical to the success of BEMs • Motivates commitment to tasks • Employees should engage in long-term problem solving • The person closest to a problem should solve it • Motivates to achieve what the organisation expect • Positive experiences associated with tasks motivate • Strategic and operational plans should be communicated to employees
Boundary spanning	• Transfer of knowledge/information/ideas across boundaries • Collaboration across functional boundaries • Improves productivity and decision-making • There should be a knowledge integration structure • Boundary spanning is improved when people closely interact

3 Methodology

In this chapter the methodology used throughout the research is presented. The methodology was designed according to the research question and purpose, focusing on how these can best be addressed. First the research approach and design are described, following which the main study is presented. The main study is divided into a section regarding data collection, followed by a description of the methods used for analysis of the data. Figure 3 illustrates the structure of the methodology description.
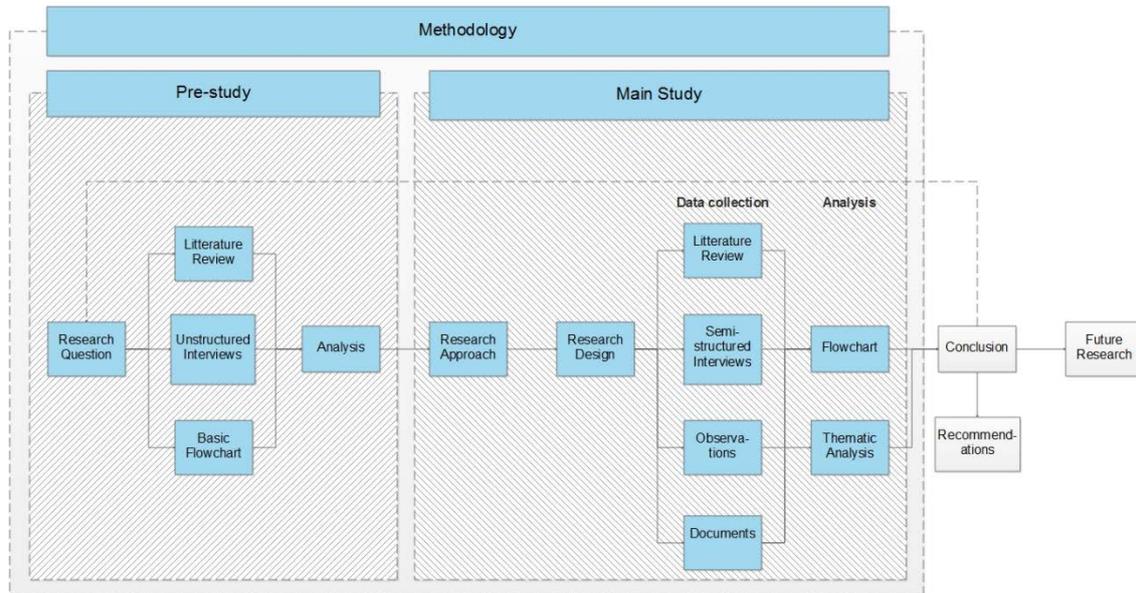
Figure 3. Illustration of the methodological parts and their position in the study process

3.1 Research Approach

A qualitative approach was chosen for the research, as this approach is suitable for gaining insight into the reasons for people's behaviour, their underlying motivations, and the context they work in (Bryman and Bell, 2011). Being able to provide recommendations on how to improve BE requires a detailed understanding of the current situation, which is best obtained through talking to people, empowering them to tell their own stories. Quantitative methods are more likely to restrict the interviewees' answers to what the researchers are expecting, which has a negative effect on the relation between researchers and participants. Qualitative methods allow for collaboration with participants during the research, which can lead to conclusions that are better attached to reality. Another reason for choosing a qualitative approach is that it captures interactions between people in a better way than existing measures and a quantitative approach. Finally, a qualitative approach allows for, and encourages, the use of multiple forms of data which can help in providing a more comprehensive understanding of the issue (Creswell, 2007).

The research approach used was mainly inductive, with iterative influences. An inductive approach, also called an open approach, is often used in qualitative research (Jacobsen et al., 2002). With an open mind and empirics as a starting-point, the researchers are more receptive to

new information (Jacobsen et al., 2002) and can collect more relevant information. It is important to understand the current situation in the case company, and an inductive approach makes it possible to better reflect reality in the chosen setting, compared to a deductive approach, testing a hypothesis developed from theory (ibid).

Although the research was mainly inductive, some initial knowledge on the subject was obtained through a literature review. Researchers claim that it is not possible to conduct research without some previous expertise (Jacobsen et al., 2002), and except for some initially collected knowledge helping to guide the study, the research was carried out based on as few preconceptions as possible. Theory was used to explain and compare the findings, rather than the other way around. Theory was drawn upon as it became relevant, suggesting that iterative elements were also part of the study. To conclude, an inductive approach, explaining reality with the help of theories, with iterative influences, was used (Bryman and Bell, 2011).

3.2 Research Design

In order to gain a deep understanding of the subject, a single case study was carried out. Studying a single case allowed for more in depth analysis than a multiple case study would. A case study is considered well suited for explaining unique environments such as an organisation, in this case SKF Actuation System. The methodology can also aid in theoretical development (Jacobsen et al., 2002).

Several reasons motivate carrying out a case study at SKF Actuation System. SKF is a manufacturing company and should be well suited for BE efforts (Gomez, 2011), yet the business unit experiences problems with its BE initiative, which makes it interesting from an academic point of view. SKF Actuation System is supported by the collective knowledge of the business group, but it contains all the main functions of an autonomous company and operates largely as its own organisation. This implies that the business unit provides clear boundaries, making it ideal for a case study (Jacobsen et al., 2002). The size of the unit makes the research viable, i.e. it is possible to develop a holistic view of the unit during the research period.

3.3 Pre-study

Initially, a pre-study was carried out in order to provide understanding of what the current business process entails, and what the concept of BE implies (Figure 4). Little initial knowledge made a pre-study ideal in order to grasp the scope of the research, and what areas problems in the business process could be related to. The pre-study provided empirical knowledge to build a basis for the continued research, and based on the findings delimitations regarding which aspects of BE to focus on could be set.
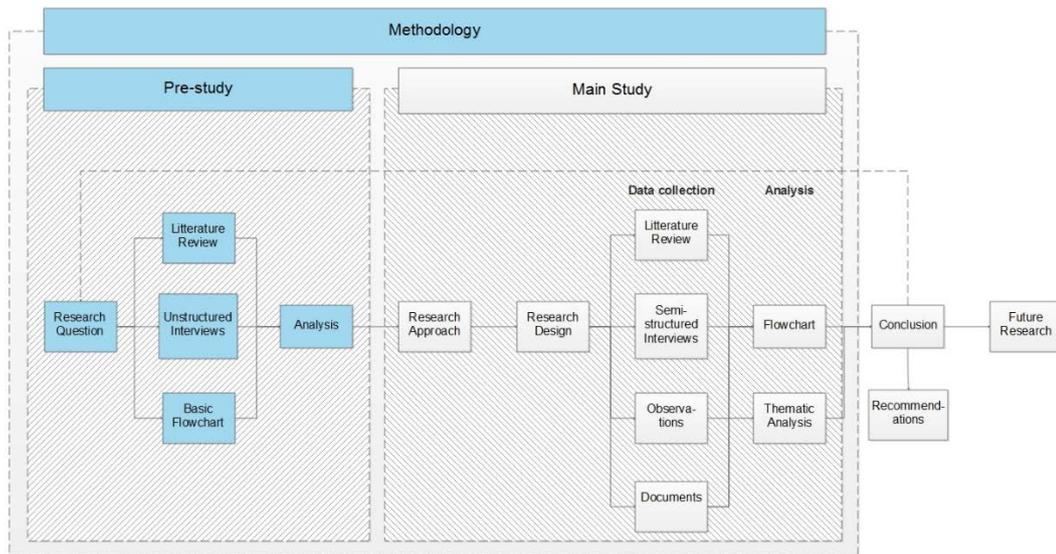
Figure 4. Illustration of the pre-study as part of the methodology

An initial literature review provided a basis for approaching the subject of BE. The literature was gathered from Gothenburg University's libraries and relevant data bases, e.g. Business Source Premier and Emerald Insight. In order to build an understanding for the case company and the BE efforts made, internal company documents were also studied. A basic theoretical framework was constructed, based on the literature study.

Unstructured interviews, i.e. interviews with few guidelines and no formulated questions (Bryman and Bell, 2011), provided an initial understanding of the current business process and guided the continued assessment of SKF Actuation System's BE efforts. Unstructured interviews were deemed suitable as the knowledge about the business process was limited, and there was little written material on the process.

Unstructured interviews were conducted with "Supply Chain" and "Finance" personnel (Table 3). The "Supply Chain" employee had worked at the unit for more than ten years, at different functions, and possessed a deep understanding of the overall business process. The "Finance" employee, on the other hand, provided a financial point of view on the current process and an initial understanding of common problems in the process connected to BE and "Finance". Two interviews took place with "Supply Chain" as the first session called for clarifications and additional explanations with regards to the business process.

In general, a few topics were covered during the interviews and the questions concerned the process outline and problems in the daily work. The interviewees were encouraged to speak freely, as suggested by Bryman and Bell (2011). The following bullet points served as general guidelines:

- Structure of the current business process
- Work carried out by the functions
- Pitfalls in the process
- Problems related to the process and people

Prior to the first interview, the "Supply Chain" employee gave a guided tour of the production facilities (observation) in order to enhance the understanding of the business. The interviews were carried out in Swedish, on-site in Gothenburg. The findings from the interviews with regard to the process design were illustrated in an initial flowchart in order to visualise the process and enhance the understanding of it. The flowchart illustrates functions and major activities performed by the different functions.

Table 3. List of unstructured interviews

Function:	# of interview:	Date of interview: (year-month-day)	Duration of interview (h):
Supply Chain Interviewee 1	2	2016-01-27 2016-02-12	1,5 h 1 h
Finance Interviewee 1	1	2016-01-25	0,5 h
# of interviews	**3**		

Based on the findings in the pre-study an initial draft of the interview guide was developed and interviewees were selected. The draft was based on the findings from the pre-study and the academic literature provided guidance on how to structure the interview guide, highlighting areas of interest to investigate further. The interviewees were selected from different functions and business lines in order to provide a comprehensive view of the business process. This will be described further in the next section.

3.4 Data Collection

Following the pre-study the main data collection was carried out (Figure 5), considering both primary and secondary data. The academic framework was developed and data collection was carried out through interviews, as well as observations and reviews of internal documents. The different parts will be accounted for in more detail below.
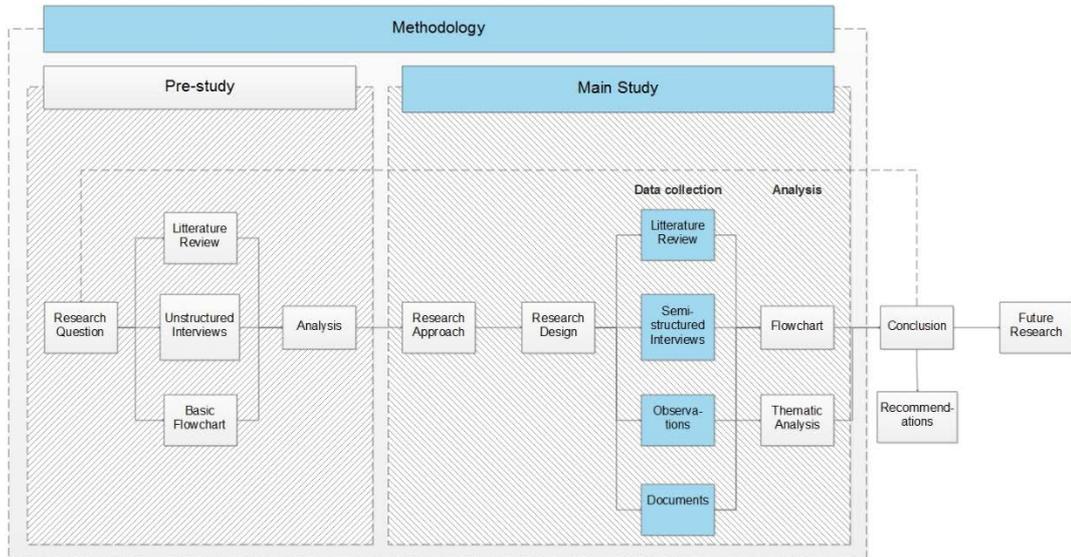
Figure 5. Illustration of the main study as part of the methodology.

3.4.1 Primary and secondary data

Different kinds of data were retrieved in the research. The interviews and observations made up the primary data found in the study, as it was collected for this specific research (Bryman and Bell, 2011). Secondary data was also used, in order to enhance the understanding of the case company. The secondary data consisted of company documents put together for other purposes than this research (ibid).

3.4.2 Constructing the Academic Framework

The initial theoretical framework was expanded upon during the data collection phase. An updated literature review was conducted based on the findings from the initial interviews during the pre-study. The new literature focused more intensely on aspects of BE, processes and people, based upon what was mentioned during the initial interviews.

The procedure when constructing the academic framework was the same as during the pre-study; Gothenburg University's libraries and databases were accessed (Figure 6). The developed framework provided input when finalising the interview guide, and was reflected in the main categories addressed and in the questions. The aim was to make the interview guide as comprehensive and relevant as possible.

Main databases used: Business Source Premier, Emerald Insight, ScienceDirect

Main search words used: Business Excellence, process mapping, EFQM, processes + standardisation, Service Excellence, TQM, Business Process Management, Boundary Spanning, Industrial Management, Industrial Efficiency

Figure 6. Main databases and search words used in the search for academic literature

3.4.3 Semi-structured Interviews

Empirical data was gathered through semi-structured interviews with personnel involved in the business process. Semi-structured interviews allow for flexibility and permits the researcher to ask questions that are not covered in the interview guide, in order to best capture the interviewees' opinions and let the interviewees shape the research based on their in-depth knowledge of relevant areas (Bryman and Bell, 2011). Since the employees at the business unit have different knowledge about the business process and its pitfalls it was important to allow them to explain their viewpoints even if these were not initially covered in the interview guide. In order to gain a deeper understanding of the interviewees' answers follow up questions were frequently asked during the semi-structured interviews.

An interview guide (Appendix C) was used during the semi-structured interviews in order to make sure that important areas and topics are covered in the research, as suggested by Bryman and Bell (2011). The guide consisted of two main parts, assessing aspects of processes and people, and covering the areas of interest as per the delimitations of the study. Before the interviews were carried out, the interview guide was tested on two peers at the University of Gothenburg, in order to determine if there were any shortcomings or room for improvement.

Interviewees were selected in order to assure a comprehensive view of the business. People from each function and each business line, working in the business process, were interviewed, Table 4. The interviews were performed on site at the business unit, and scheduled for an hour each. In total 14 people were interviewed from the following functions: "Business Support", "Product Engineering", "Purchase", "Supply Chain", "Production" and "Finance". The research does not focus on improving BE in the manufacturing process per se, and the interviews with "Production" personnel focused on their interaction with the business system and other functions at the business unit.

Table 4. List of interviewees at the case company, SKF Actuation System

Function:	# of interview:	Date of interview: (year-month-day)	Duration of interview (h):
Business Support Interviewee 1 Interviewee 2	2	2016-03-15 2016-04-21	1 0,75
Product Engineering Interviewee 1 Interviewee 2 Interviewee 3	3	2016-03-29 2016-04-21 2016-04-25	1 1 0,75
Purchase Interviewee 1 Interviewee 2	2	2016-03-10 2016-03-16	1 0,75
Supply Chain Interviewee 1 Interviewee 2 Interviewee 3	3	2016-03-11 2016-03-21 2016-04-08	0,75 1 1
Production Interviewee 1 Interviewee 2 Interviewee 3	3	2016-03-10 2016-03-29 2016-03-29	1,5 0,5 0,5
Finance Interviewee 1	1	2016-04-04	1
Total # of interviews:	**14**		

The interviews carried out in the research were recorded and transcribed. The transcriptions allowed for better recollection of what was said during the interviews, and how it was expressed, and facilitated the analysis of the interviews (Bryman and Bell, 2011). The findings were validated by offering the interviewees to read the interview transcripts (Burnard et al., 2008), and a summary of the findings were brought to each of the interviewees for confirmation.

All the interviews were conducted in Swedish. Swedish is the native language of all the interviewees (and the interviewers) and it was deemed important that the interviewees were given the possibility to express themselves in the most natural way. The transcriptions were also conducted in Swedish. In order to limit the risks associated with translation these were made as accurately as possible, in order to keep the essence of the information.

3.4.4 Semi-structured Observations

Semi-structured observations were carried out as part of the research. The observations allowed the researchers to observe how people in the organisation actually behave (Jacobsen et al., 2002), providing a more nuanced picture of the BE efforts. In order to improve the understanding of the organisation, four different settings were observed. Four different meetings were observed and one observation took place in "Production", Table 5. The actual proceedings by "Production" personnel when interacting with the business system were important to observe in order to bring clarity to this aspect of the business process.

The other observations concerned meetings that had been mentioned during the interviews as important forums for interaction between functions. The aim was not to fully account for all aspects of the meeting (unstructured observation), neither was it to observe and measure specific details based on pre-set expectations (structured observation) (Bryman and Bell, 2011). Rather the purpose was to gain additional insight into some broader aspects associated with BE, and a semi-structured approach was used. Therefore the approach was as follows (Figure 7).

Figure 7. Illustration of the role of the researcher during the observations (adapted from Creswell, 2007)

The observations were performed on-site at SKF Actuation System and carried out as open observations. At the opening of the meetings, the researchers informed about the research, making the people aware of the observation (thus open observation). During the meetings the researchers assumed the roles of observers, not participating in the meeting, in order to have as little influence as possible on events and to gain an accurate picture of the organisation (Figure 7) (Jacobsen et al., 2002).

 During the observations an observational protocol was used, as recommended by Creswell (2007). There were no meeting protocols to base the observational protocols on. Instead, the observational protocol was structured according to the main categories of BE investigated and the observation notes were added in chronological order to the protocols two columns: descriptive notes and reflective notes (Creswell, 2007). In order to be as attentive as possible some notes were added after meeting, this especially concerned reflective notes. (Appendix B)

Table 5. Observations performed as part of the study

Observation:	# of observations:	Date of observation: (year-month-day)	Time for observation (h):
Manufacturing Procedures	1	2016-04-25	0,5
Production planning meeting	2	2016-02-26 2016-03-04	1 1
Pulse meeting	1	2016-05-12	0,5
Business line information meeting	1	2016-05-13	0,75
Total # of observations	**5**		

3.4.5 Company Documents

Company documents were studied in order to better understand the business and efforts related to BE. The documents were obtained from SKF Actuation System, and mainly intended for internal use. The studied documents included the unit's quality guidelines, material about "SKF Business Excellence", reporting material and work instructions. These are listed in the table below (Table 6).

Table 6. The company documents studied in the research

Document:	# of documents:
Quality Document (QD)	1
Information material on "SKF Business Excellence"	1
Monthly reporting material (including KPI dashboard)	1
Work instructions "Finance"	3
Total # of documents	**6**

3.4.6 Illustration of the Data Using a Flowchart

Flowcharting was deemed a suitable approach to illustrate the business process. The method is recommended when illustrating services, such as process reengineering and enterprise resource planning (ERP) systems (Linton, 2007). According to Aguilar-Savén (2004) flowcharts are especially suitable when illustrating processes in great detail. The illustration also made it easier when asking the interviewees to confirm the procedures in the process, and the illustrated process was brought to all interviewees for validation.

The flowchart was outlined according to Jacka and Keller's (2009) main approaches to flowcharting: starting with the registration of an order inquiry, illustrating the main activities in the business process, and ending with the payment of invoices. The main activities were broken down into sub activities in order to enhance the understanding of the process. The process was visualized using the software Edraw Max 8, and the illustration provided a holistic view of the business process at SKF Actuation System, guiding the continued work with BE at the business unit.

3.5 Analysis

During the third and last phase of the research the empirical findings were analysed, and conclusions regarding how SKF Actuation System can improve BE were drawn (Figure 8). When analysing the interviews, a positive approach to the interviews was taken, and the findings from the interviews were treated as facts about behaviour and attitudes (Have, 2008).
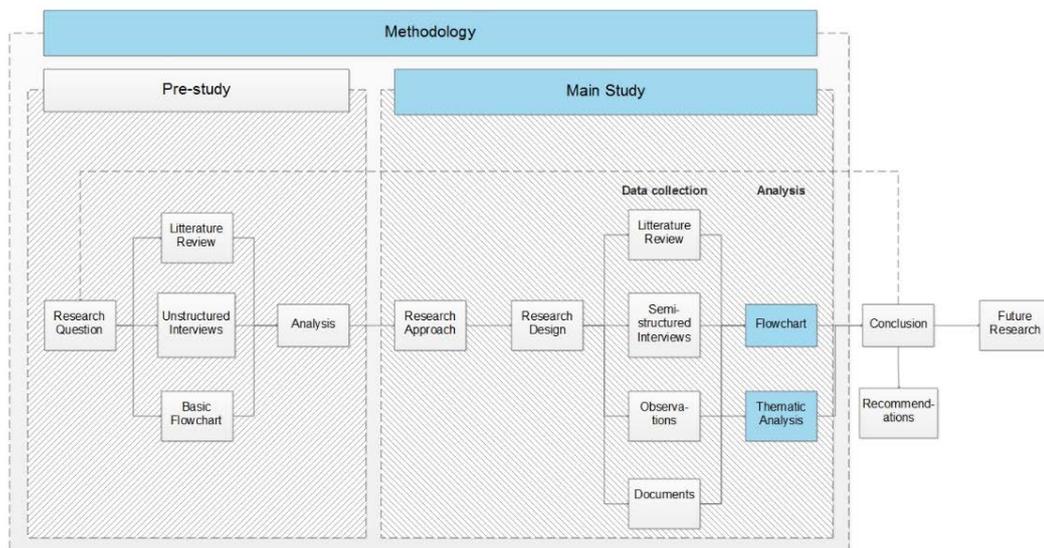

Figure 8. Illustration of the analysis part of the methodology

3.5.1 Thematic Analysis

The main analysis of the research was carried out through coding and a thematic analysis, as suggested by Burnard et al. (2008). Analysing qualitative data through coding and identifying common themes is also recommended by Bryman and Bell (2011), and the usage of a thematic approach helped to ensure that all relevant aspects of the interviews were included in the analysis.

Initially, the transcribed interviews were read through, and themes as well as subcategories were identified from the script. Noting themes means that open-coding was carried out. Off-topic comments were uncoded, in order not to influence the research. The process of coding the interviews was repeated twice in order to verify the initial coding (Burnard et al., 2008). The transcribed interviews were thereafter reassessed, and the different sections were cut out and fixed on a blank paper.

The different subjects were marked on the paper, resulting in a clear illustration of the data that was used when analysing the results (Burnard et al., 2008). The observational protocols were coded in connection to the coding of the interviews, and the aggregated empirical findings were summarised in a table, as suggested by Creswell (2007).

The empirical findings were contrasted against the theoretical framework. A comparison helped in explaining problems in the business process and in guiding the assessment of how BE can be improved.

3.5.2 Flowchart Analysis

The flowchart was analysed separately through marking out possible pitfalls in the process beneath the flow chart, and connecting problems that indicated a causal relationship. This illustrated the potential sources for many problems and linkages in the process.

All the possible process pitfalls mentioned by the interviewees were collected and duplicates were discarded. The aspects were then sorted according to function, i.e. were in the process they originated. These pitfalls were then listed underneath the flowchart and causality was illustrated by connecting initial pitfalls to resulting consequences later in the process.

The process flowchart with pitfalls was brought to all interviewees, allowing them to comment and make adjustments to the findings. Some slight moderations were done after this. Afterwards, the flowchart was posted on the office wall and all personnel was encouraged to come up with comments and suggestions on how to improve the process and avoid pitfalls. The improvement suggestions were then compiled and summarised. Verifying the findings with employees enhances the trustworthiness of the results, and involving them in improving BE makes the improvement suggestions grounded in the organisation and increases the likelihood of positive outcomes.

3.6 The Relevance of the Method

There have been several qualitative case studies related to BE (Abdullah, 2010; Pankaj, 2010; Chang et al., 2003), showing this to be suitable approach when assessing companies' BE efforts. The applied methodology combines different methods, which is ideal in order to gain as accurate a result as possible when conducting qualitative research (Jacobsen, 2002). Creswell (2007) also encourage the usage of multiple sources of data in order to have a "good" qualitative study and suggests combining sources such as interviews, observations and documents in order to attain a

fuller picture of the case company, as this makes it possible to confirm data from many different sources. Three different sources of data have been used, increasing the relevancy of the method, and providing a more complete picture of the case company.

3.7 Method Discussion

The method is discussed in connection to the empirical findings (chapter 6). The method discussion includes reflecting upon the used methodology, and mainly concerns the research's validity and reliability. Validity refers to the accuracy of the findings (Creswell, 2007) and how well the aspects investigated are actually studied (Bryman and Bell, 2011), whereas reliability concerns the consistency and replicability of the study (Bryman and Bell, 2011). It should be noted that the two aspects are connected. For instance, with high validity the reliability of the study increases. Validity and reliability are accounted for below, and the discussion provides the basis for suggested future research (section 7.3).

Assessing the business process, people from all different functions and business lines were interviewed about the business process. A heterogeneous sample made it possible to account for different perspectives from within the organisation, which makes it possible to better answer the research question (Bryman and Bell, 2011). In order to ensure credibility, the interviewees were asked to confirm the findings from the interviews and also asked to participate in the analysis of the findings by providing input on the process and its pitfalls, which is recommended by Creswell (2007). This foremost improved the ability to answer the research question and improved the validity of the research. Structuring the interview guide according to the main concepts of BE investigated helped ensure validity.

To best answer the research questions aspects of BE were investigated in different ways and using different methods. When data appeared in two or more sources it could be confirmed through triangulation, i.e. confirmed by multiple data sources and/or methods, increasing the trustworthiness of the findings, as suggested by Creswell (2007).

Efforts were made to establish reliability. The methodology has been accounted for and thorough documentation was conducted during the case study, e.g. an interview guide was used and the interviews transcribed. This makes it possible for others to carry out similar research in the future, and also to assess the research, as described by Bryman and Bell (2011). The consistency of the study was also improved by repeated reviews of the transcriptions when the coding was performed, increasing the study's reliability.

The chosen approach of a single case study has impacted the transferability of the study (Bryman and Bell, 2011). The research represents a unique environment and its aim was not to provide general recommendations. Thus the conclusions will not be readily applicable to industrial companies in general. That said, the case study can serve to clarify important aspects of BE that can be of interest for other companies as well.

Subconscious bias is a common problem with regards to qualitative research as research will always be shaped by researchers' subjective views (Creswell, 2007; Bryman and Bell, 2011). In order to have conformability an aim with the research was to account for findings as accurately as possible. Measures taken in order to have conformability include inviting the interviewees to read the transcripts and provide input.

The researchers have faced several challenges mentioned in the literature. Many were related to field issues, and some of them are mentioned here.

During observations and interviews it is possible to be overwhelmed by all the information, and to recall the most important aspects of the observation it was therefore important to take notes, as well as record the interviews. To make sure important information and opinions were raised during the interviews it was important to ask appropriate follow-up questions. The recording of the interviews aided the analysis as all information was easily accessible. Analysing documentation posed challenges when it came to locating relevant material, as pointed out by Creswell (2007). Another challenge has been to maintain a global perspective, while still including enough detail of the functions' work and experiences. It is possible that more in-depth analysis of functions, tasks or problems could increase the understanding of problems related to BE. This said, the many measures taken to ensure validity and reliability has strengthen the research in this study.

It is possible that the results of this study would have been different if more (or all) of the categories of BE had been assessed. Including more aspects of BE could have provided additional explanations as to why problems related to BE occur in the business process, and thus provided more guidance on how BE could be improved. Possibly, more insight into how aspects of BE are related could have been gained using a combination of quantitative and qualitative approaches.

The holistic approach made it possible to gain an overall understanding of the subject. A closer study of some aspects of the business process could have provided a more thorough understanding of problems, and required actions, related to a specific area. For instance, this could have allowed for an even clearer understanding of cause and effect.

4 Findings from the Pre-study

This chapter accounts for the findings from the pre-study, which rendered directions for the main part of the study. The pre-study provided insight into the current business process and highlighted potential focus areas among aspects of BE (and TQM), which could help in explaining problems in the current business process. The findings from the pre-study provided the delimitations for the continued research. The findings from the pre-study are accounted for below.
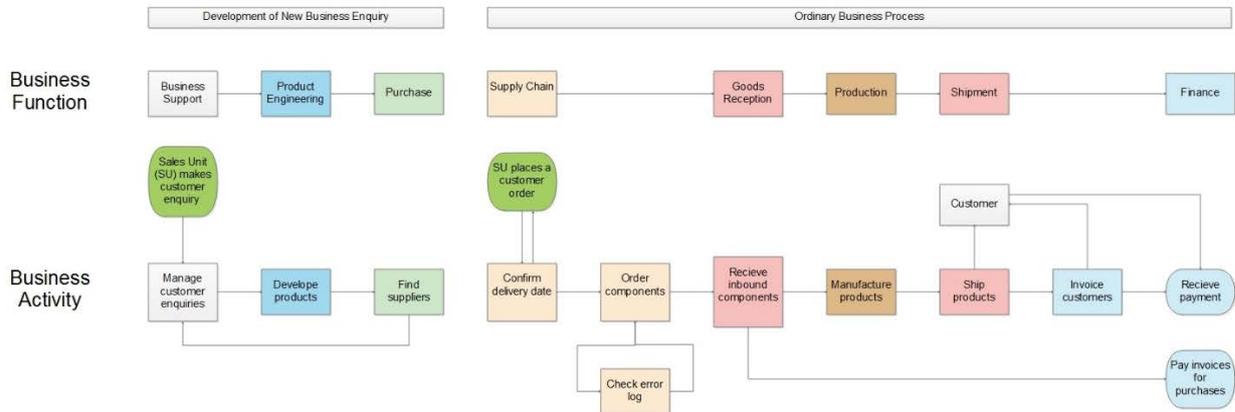
Figure 9. Flowchart illustrating the main activities, and functions, in the business process

The business process can be divided into two parts. The first part is the development of new business enquiries. Enquiries are received and evaluated by "Business Support". If an enquiry is of interest to the business it goes through to product development. The products are then developed by "Product Engineering". "Purchase" assists with finding suitable suppliers for components and providing cost information. (Figure 9)

The second part of the business process consists of the main (day-to-day) process. "Supply Chain" receives customer orders, plans delivery dates and makes sure that all component required in production are ordered. Delivered components are received and stored by "Goods Reception", before "Production" carry out the manufacturing. The finished products are shipped off by "Shipment". During the final stage of the process "Finance" handles all invoices. (Figure 9)

Four main problems associated with excellence in the business process appeared during the pre-study. The first problem was that there is no clear understanding of what each role at the unit includes. A second problem was that there is a lack of understanding of the whole business process when the employees are mostly aware of their part of the process and not all of the activities carried out. The third main problem at the business unit was that different functions at the business unit do not exchange all important information with each other, and other people in the process therefore lack information which they might need to manage their job in a successful way. The fourth problem raised during the pre-study is that employees do not take responsibility for ensuring the quality in their work, according to the "Finance" interviewee.

The main problems identified are associated with process management and employees. More specifically, standardisation and process understanding appear to be of special interest related to process management. Considering the aspects connected to employees, employee involvement and empowerment as well as information exchange stand out as areas of further interest. Based on the findings in this pre-study these areas were further investigated in the main research.

5 Empirical Findings

In this chapter the findings from the interviews, observations and documents are presented. First the process at the business unit is described in order to increase the understanding of how the business unit works. Different perspectives on the current process are also presented. When the process with its current problems has been presented, the empirical findings are presented according to theories from chapter 2.

5.1 Processes

The current business process, including functions and activities, is accounted for in the text below. In order to enhance the understanding of the process it is accounted for in two different sections, explaining the initial and the main part of the process respectively. The business process can be followed in the ERP system M3. Activities in the business process result in status updates that are logged in the ERP system. These are illustrated in the flowchart in the order of their appearance. The complete flowchart can be found in Appendix D. There is no existing mapping of the overall business process "from enquiry to cash" at SKF Actuation System, and the mapping of the process is derived from consensus of the conducted interviews. Ambiguities regarding the business process are accounted for after the general business process has been explained.

5.1.1 The Initial Business Process

The business process is made up by activities carried out by different functions. The functions are: "Business Support", "Product Engineering", "Purchase", "Supply Chain", "Production" and "Finance". The "Production" function includes "Goods Reception" and "Shipment". These have been treated as separate functions in the business process due to the difference of the tasks they carry out. The initial business process includes "Business Support" which manages order enquiries, "Product Engineering" developing products and "Purchase" is responsible for finding new suppliers. The temporal process is accounted for below.

Step 1: The function "Business Support" manages order enquiries that concern products that are not included in the business unit's standard assortment or deviate in different ways from standard orders. The enquiries are forwarded from SKF "Sales Units" (SUs). Once an enquiry is received the unit "Business Support" evaluates the business potential of the order, based on input from primarily "Product Engineers" and "Purchase". The business potential is evaluated considering financial aspects and if it fits the existing assortment. Collaboration with other functions ("Product Engineers", "Purchase", "Production" et cetera) helps ensure that the estimations are sound and grounded in the business. Enquiries that show business potential are met with an offer where the price is determined based on the estimated costs for supplying the product, and a mark-up (Figure 13). If the offer is accepted by the customer the products are brought forth to the development stage. (Figure 10, part A)

Step 2: The function "Product Engineering" develops new products and redevelops and improves the existing assortment. Early in new projects the function often helps with investigating if the unit can use products from the existing assortment to meet customer demands, or if the development of a new product is necessary. The construction of new products is based on customer specifications, received from "Business Support". Having designed a new product the function ("Product Engineering") is then responsible for building prototypes and testing these, as

well as building a product structure and registering all components comprised in the product in M3. As soon as component specifications have been determined, specifications are handed over to "Purchase". "Product Engineering" may also be contacted by e.g. "Purchase" when suppliers or components need to be exchanged. The engineer then investigates if new component suggestions work for the relevant product and informs "Purchase" about the findings. (Figure 10, part B)

Step 3: The unit "Purchase" is responsible for finding suppliers and managing supplier relations. Based on the component requirements specified by "Product Engineering" the employees in the function search for suitable suppliers. "Purchase" is also responsible for adding information about components to the product structure in M3. The added information should include the negotiated supplier agreements. If purchases are made from a new supplier, "Finance" registers the new supplier in M3, based on the information received from "Purchase". When "Purchase" has completed its work the case is handed over to "Business Support". (Figure 10, part C)

Step 4: Following the preparations "Business Support" informs the SU that the product is ready to be ordered by the customer. "Business Support" normally handles all the communication with the SUs, which in turn handle the contact with customers. However, in larger projects the responsibility for managing the customer contact is sometimes assumed by "Business Support". (Figure 10, part A)

The order and delivery of products is dependent on a correct registration in the M3 system. If a product or a component is registered with a status lower than 20, the order cannot be placed. Furthermore, all the necessary information about the product and the components has to be registered in M3 in order for the continued process to work as planned. The product structure in M3 provides all the necessary information about the products, and provides essential groundwork in order for activities later in the process to run smoothly. This includes information about the components and their article numbers, layout instructions and instructions for work operations, including possible subcontract work. Additionally, all costs associated with producing the product also have to be registered.
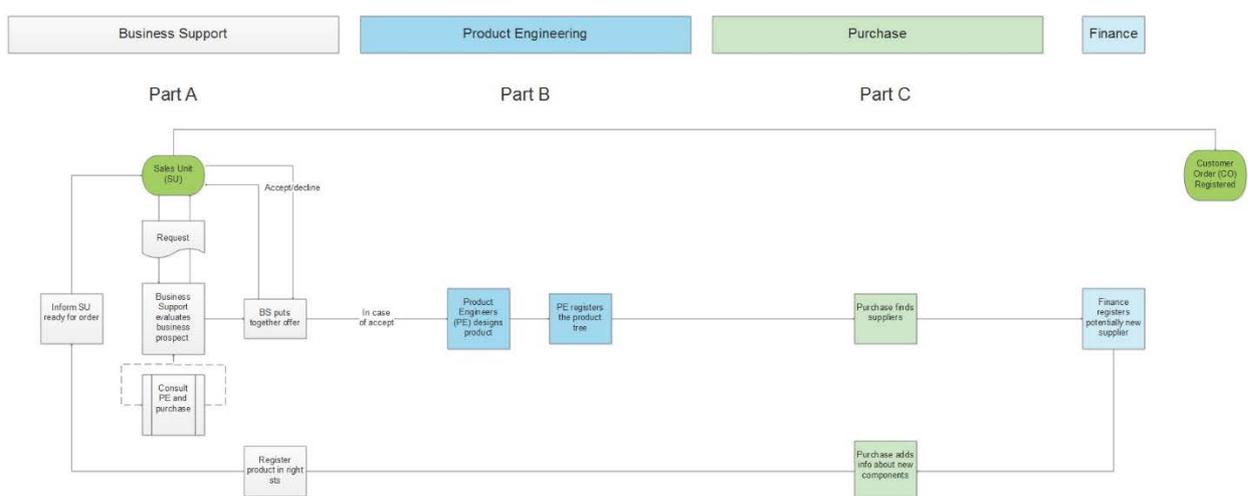
Figure 10. The initial business process, part A-C

5.1.2 The Main Business Process

The main business process includes "Supply Chain", which handles customer orders within the existing assortment, "Goods Reception" receiving deliveries to the manufacturing unit (MU) and "Production" manufacturing the products. The function "Shipment" is responsible for collecting and sending off products and "Finance" manages the final part of the business process including bookkeeping, payments and invoicing.

Step 5: "Supply Chain" should make sure to order components so that they are available at production start. The customer orders (COs) are translated into manufacturing orders (MOs) when transferred from the SUs' system to M3. When receiving a MO "Supply Chain" initially checks the order and confirms the delivery date to the SU. Thereafter the availability of components at production start is ensured through the execution of distribution orders (DOs) and purchase orders (POs). DOs refer to the transfer of components internally, within the SKF business group, to the MU, whereas POs concern the placement of orders for components from external suppliers. "Supply Chain" not only places orders for components, the function is also supposed to follow up the confirmations from suppliers to assure compliance. Finally, "Supply Chain" checks the error log and follows up on complications related to the placements of orders. Information about potential and current delays can be found in M3. (Figure 11, part D)

Step 6: Deliveries to the MU are received by the "Goods Reception". The function registers incoming goods in the system before storing it in one out of three stock zones until production start. The exception is project components that are stored separately in order to make it easier for the engineers working in the projects to find components needed for prototypes and testing. The registration in M3 should always be based on the accompanying delivery note, not on the order placed. If there is no delivery note, "Goods Reception" should contact "Supply Chain", which in turn contacts the supplier and asks for a copy of the delivery note. The current "Goods Reception" used to be a goods control were all incoming goods were controlled in a standardised manner. The change was made due to few detected errors in the goods received and the outlook of a less resource demanding set-up. (Figure 11, part E)
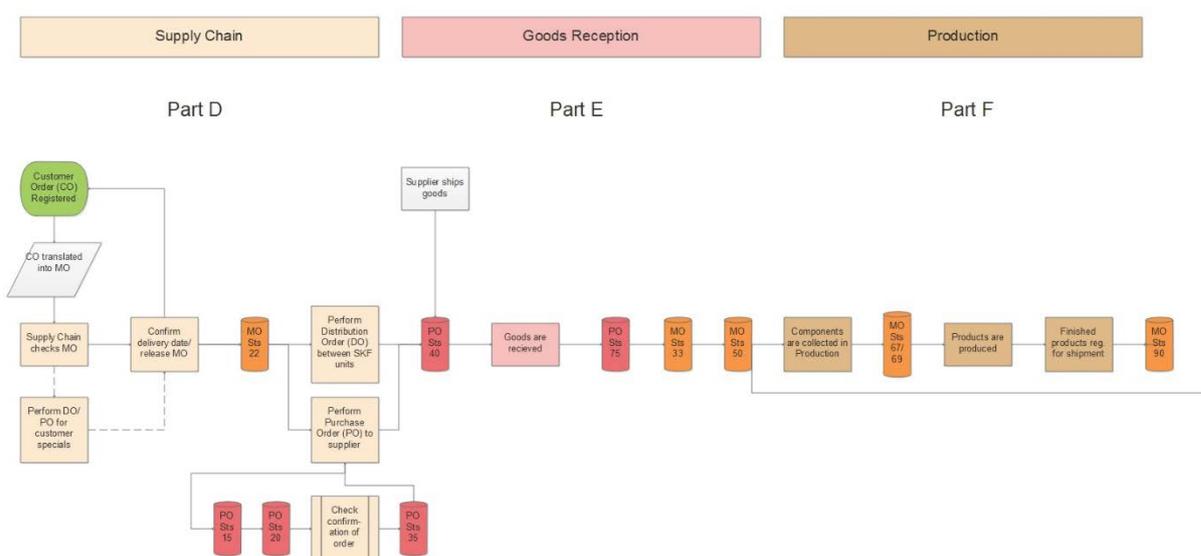
Figure 11. The main part of the business process, part D-F

Step 7: "Production" manufactures the products. The production starts with the printing of all needed documents including a picking list stating all the required components, and these are then collected. When the components have been collected they are considered work-in-progress. Another system update takes place once the products are finished. The products are then registered in M3 as completed and ready for shipment. For the registration to be complete the resource utilisation during "Production" must be registered, including time and material consumption. When the registration procedure is done the products are placed in the shipment area. (Figure 11, part F)

Step 8: "Shipment" is responsible for collecting and sending off products. The data system provides a list of all the products that have been registered as finished and ready for shipment, as well as information about what orders should be shipped. The finished products are collected and shipped off, and marked as shipped in the system. (Figure 12, part G)

Step 9: "Finance" manages the final part of the business process including bookkeeping, making payments and performing invoicing. Since 2015 the processing of incoming invoices is outsourced to Poland, where the invoices and the orders are matched in M3. All invoices that deviate from the original orders placed have to be confirmed by "Supply Chain" on a digital platform. Overhead invoices are processed using a separate software - Basware. Nowadays, the outsourcing company also handles customer invoicing in M3. Customers' payments are made to the SUs, which then divide the revenue and distribute a share of it to the MU (Figure 13). If there are any problems related to the payment of invoices "Finance" is contacted (Figure 12, part H). The "Finance" function's work will be explained in more detail in a separate section (5.1.3).
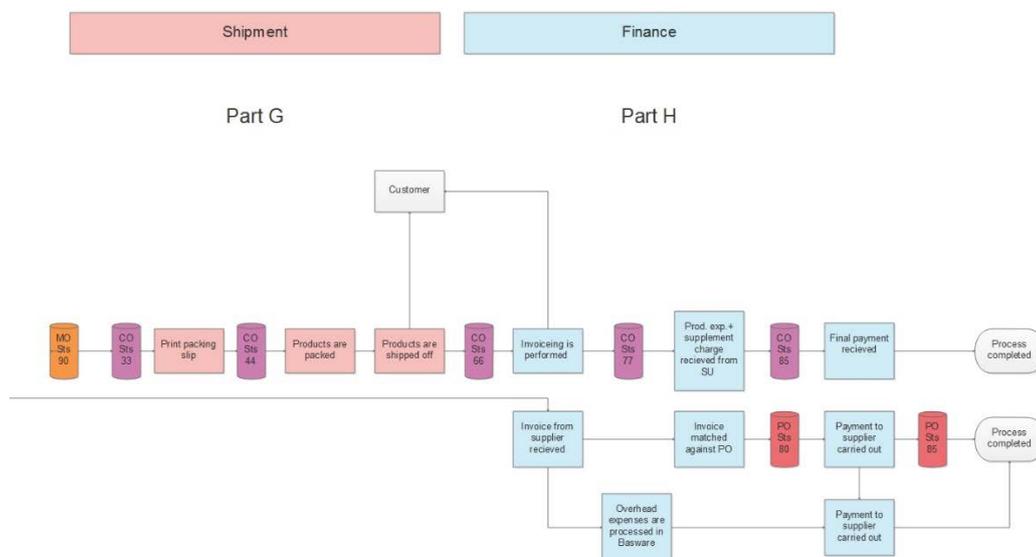
Figure 12. The main business process, part G-H

The process is managed through regular planning and pulse meetings. The production planning for Automotive & Standards and Industrial Specials is carried out manually at weekly meetings held every Friday. There is a computer program for production planning but it is not used as it is considered too laborious. At the meeting the workforce requirements for all product lines, for the following week, are established. The planning is carried out based on manual estimations, which in turn are based on registered MOs and material requirements for the MOs. "Supply Chain" is present during the meetings and provides information about upcoming and prioritised orders.

Large customers are prioritised over smaller ones. The production capacity is estimated based on the production manager's knowledge of the upcoming week. The production planning for Systemhouse is managed using a production planning software. Pulse meetings are held in the office every day for each of the product lines, and in production. During the pulse meetings participants from different functions brief each other.

5.1.3 The Finance Function and Financial Impact

Considering the business process from the perspective of "Finance" calls for further understanding of the "Finance" function's work. It is also important to understand financial impact that results from the work performed at the business unit.

As previously mentioned, the SUs receive the payments from the customers, and a part of the profit is then distributed to the MU. The price is based on the costs associated with supplying the product and a mark-up. The main steps are illustrated below (Figure 13).
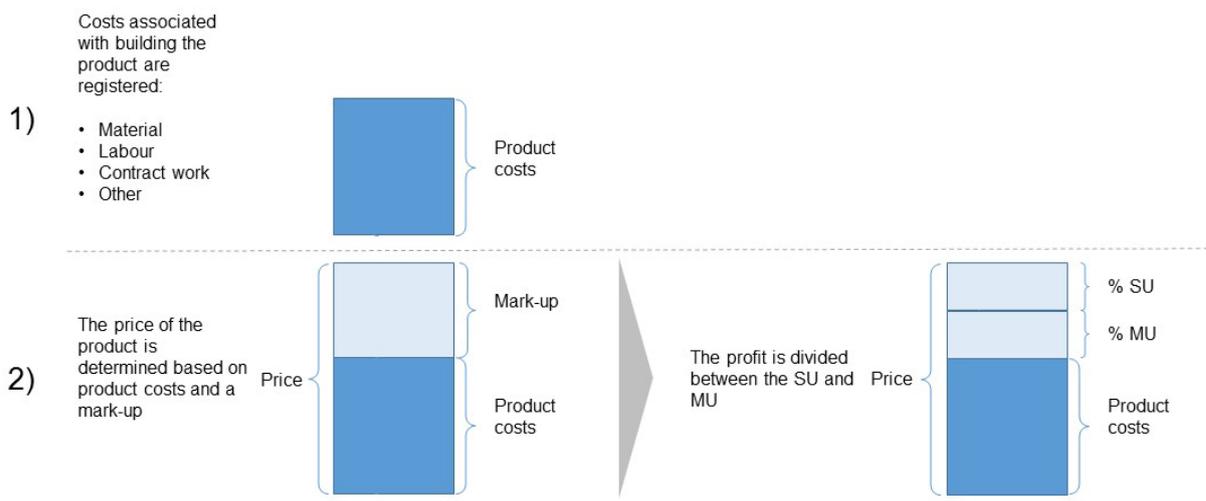
Figure 13. The price of the product is determined based on the costs for providing the product, and the profit is divided between the sales unit (SU) and the manufacturing unit (MU).

"Finance's" work tasks include performing invoicing, paying invoices, and following up on revenues and costs on a monthly basis. The work also includes bookkeeping and problem solving related to financial issues, among other things.

There are some requirements that have to be fulfilled in order for "Finance" to be able to perform the work properly. When matching invoices to orders in M3 all the necessary information, about suppliers, goods, orders et cetera, has to be registered in M3. Also, the goods must have been received and the invoice has to correspond to the initially placed order. Invoices that are not processed in M3 can be processed in Basware. When following up on costs and revenues it is important that all the information in M3 is accurate, and that orders can be traced in the system. The main criteria for "Finance" are listed in the table below, Table 7.

In addition to activities impacting "Finance's" ability to carry out tasks, there are also financial effects that result from other functions' activities. The main ones are increased costs and reduced revenues. Related to the financial figures and customer satisfaction, broken promises (BPs) is

considered a focus area. BPs are estimated based on the unit's ability to deliver what has been promised to the customer on time. BPs can result in financial compensation to customers, or even lost customers, which impact costs and revenues, and the area is therefore considered a financial problem. More information about measurements can be found in section 5.1.7.

Table 7. Main criteria that have to be fulfilled in order for "Finance" to process invoices and assess revenues and costs

1. Match invoice and order in M3 (main system):	2. Process invoices in Basware:	3. Assess revenues and costs:
The supplier and the order must be registered in M3	The supplier must be registered in Basware	The stock values registered in M3 are accurate
The currency on the invoice must be the same as the currency registered for the supplier	The invoice should concern overhead costs	The cost levels for manufacturing registered in M3 are accurate
The order and invoice concern direct material	Invoices that cannot be matched in M3 can be processed in Basware	The material used in production is registered when manufacturing is initiated
The invoice is processed by someone else than the person who placed the order	"Four eyes" principle apply (two persons must approve the invoice)	The consumption of resources in manufacturing is registered correctly at the end of the manufacturing
The goods must have been received and registered in M3 before the order is raised to "ready for payment" status		Costs can be followed when orders are placed on specific component numbers
Received order quantity corresponds to ordered quantity (part deliveries can be registered)		The products can be followed in M3 through all the process steps
The price on the invoice corresponds to the price on the order in M3		
Freight and reminder charges can only be booked in M3 if they are specified on the same invoice as the main order		
Deviations are below 1 SEK, and can be booked as "small deviation"		
For an order to be closed in M3 the entire order quantity must have been received		

5.1.4 General Perspectives on the Business Process

The importance of understanding the entire business process is emphasised by many of the interviewees. A "Supply Chain" respondent talks about how everything and everyone in the process are connected and the importance of everyone carrying out their tasks correctly, making sure that everything in the system is correct. Similarly, another interviewee explains that the entire unit is dependent on all functions carrying out their respective work properly, a clear process overview could help in making it more clear who is responsible for each task. Although several employees stress the need for understanding the business process many feel that the understanding and set up of the current process can be improved.

Some general problems associated with the current process are brought up. Without a clear overview many employees seem unsure of how their work impacts later stages of the process, and problems are sometimes pushed forward in the process. People are experts on their own tasks, but lack understanding of the whole process. Three interviewees emphasise that the "Finance" function in particular needs to be better understood among employees. Lacking structure, one employee states: "We are not structured enough … We work in Santa's workshop".

Another general problem concerns the business system, M3. The system is thought not to be sufficiently adapted to the work at the business unit and it is a business system that few actively work in and understand. Nor is it popular to work in M3.

Lack of resources also appears as a general concern. Several respondents talk about the standard assortment being in need of an update and "Product Engineering" needing more resources to manage updates and construction work. In the everyday process "Production" cannot manage to produce all orders on time, partly because of lack of production resources, nor does "Shipment" have time to send off all the finished orders on time. There is a concern that this will lead to a decreasing number of orders and fewer customers, which will affect the business unit's result negatively. "Finance" experiences too heavy a workload and does not have the time needed to investigate all problems related to "Finance".

5.1.5 Problems in the Business Process

There are some recurring problems in the business process. A problem emphasised by "Business Support" and "Product Engineering" is that the unit has a hard time keeping set time and cost plans for projects, which is important in order to meet customer expectations and have satisfied customers. There is rarely any buffer time in projects and documentation of projects often causes delays. A "Business Support" employee points out that time and cost are often correlated.

Another problem occurring associated with time management concerns finding new suppliers during the development stage of new products. Both "Purchase" employees feel that the time for finding suppliers is sometimes insufficient, making it hard to optimise the purchase price levels. Also, the component specifications coming from "Product Engineering" are sometimes too specific, or even supplier specific, complicating the search process.

During the development phase all the necessary information in the product structures is sometimes not registered in M3. At times all the components included in products are not registered and sometimes information about necessary order quantity, price, stock zone and transportation time from the supplier is missing. It also happens that the components are not updated to status 20 (ready to be ordered). When the information is inaccurate it impacts later stages of the process, e.g. "Supply Chain" cannot carry out its work properly. If the right steps are

not taken when registering components ("the right boxes ticked") sometimes orders cannot be marked as finished by "Production" and get stuck in the system. If components have not been registered and the delivery of components is urgent, orders are often placed using an overhead account (number) even if this is not considered common practise. Another problem is that supplier agreements are not always registered and updated properly and without updated agreements material cannot be ordered.

Other elements of the product structure causing problems are related to the manufacturing and ordering of the product. Work instructions, in particular instructions related to subcontract work, are sometimes not registered properly. When this happens, products cannot be registered properly when they are sent to - and received from - subcontract work outside of the organisation. This calls for "a manual work around" and reduces the traceability in the system. Sometimes the product is not registered in status 20 (ready to be ordered) and cannot be ordered.

Problems also occur in the main process. A general concern is that delivery dates determined by "Supply Chain" often are too optimistic, i.e. not achievable. When the dates are too optimistic, the necessary components sometimes do not arrive in time for production to start, "Production" sometimes lack the time or capacity to produce the products, and "Shipment" cannot manage to ship the orders on time.

Another problem related to "Supply Chain" concerns documents. "Supply Chain" does not always check the order confirmation after order placements, missing potential deviations. A "Purchase" employee says that "Supply Chain" does not consistently contact "Purchase" when prices stated on the confirmation of orders differ from what has been negotiated, which they are supposed to do. Deviations mean that the supplier invoice (based on the order confirmation) will deviate from the order created in M3, complicating the payment process.

Another problem related to the business process arises from errors when registering deliveries in the "Goods Reception". Sometimes material has been delivered but not registered properly in the system. It is common that goods are registered based on order instead of delivery note, as it consumes a lot of time to ask for a new delivery note from the supplier. When the material is missing in the system "Supply Chain" has to manually search for it. Other times part deliveries are registered as full deliveries, which causes problems later in the process. When "Production" is supposed to start producing products all the necessary components are not available.

The quality of inbound components is sometimes inadequate. Deliveries from suppliers sometimes consist of the wrong amount of components or faulty products. Problems are sometimes discovered by "Goods Reception", but more often they are discovered when production is about to start and components are gathered. This can delay production start if there are no other correct components to use instead. "Production" suggests controlling the suppliers they have had problem with earlier.

At times finished products are not shipped on time. "Shipment" explains that sometimes products are ready for shipment but the manufacturing staff has not marked the products as finished in the system, and then they are not visible for "Shipment". During the registration of a finished product, the product appears in status 80 if there are settings in the system that are not correct. If this is not immediately acknowledged the order will disappear from the page displayed, as the view on the screen is updated, and the order will not be visible for "Shipment". The error requires "Supply Chain" to manually correct the order. "Shipment's" high workload makes it difficult to know what products are stocked for shipment as there is no pull from "Shipment".

"Finance" sometimes has problems matching invoices to orders in M3. This makes payments difficult and has resulted in payments being delayed and invoices being payed twice when they are processed in two parallel systems. Delayed payments is raised as an issue by both "Purchase" interviewees, as suppliers do not deliver on time when they do not receive their payments on time. Double payments occur when effort is taken to speed up the process and delayed and/or urgent invoices are sent to Basware, a parallel system for managing overhead invoices. When problems occur related to the matching of invoices it is not always clear where the error originates from, and therefore it is not clear whom to contact regarding the issue. This creates a lot of additional work for many functions. "Finance" has also experienced problems related to being able to follow up and explain costs.

5.1.6 Standardisation of Tasks

Documentation of work tasks is largely missing. In general documentation of specific day-to-day tasks is not available but up to individuals to formulate. Many of the interviewees feel confident about what overall tasks they are expected to carry out and they perform these in their own preferred way. Few of the interviewees have seen any documented working instructions and none of the interviewees received any written instructions when they started working at the unit. Instead, experienced personnel teach new recruits.

An employee that has seen instructions is a "Supply Chain" interviewee who explains that all work tasks for "Supply Chain" can be found on paper, and there are general instructions on how to perform tasks in M3. Even though these documents exists, the interviewee feels that the documentation of work tasks can be improved. Another "Supply Chain" employee and a "Shipment" employee explain that they have made some instructions of their own. However, these instructions are not up to date and new ones need to be made. "Shipment" feels that there are problems associated with documenting tasks as the work includes many different aspects and all knowledge cannot be recorded. "Finance" is one of few functions with several work instructions. The instruction were put together prior to the outsourcing of tasks from the "Finance" function.

There are some standard documents that the unit should follow. Several of the interviewees refer to the Quality Document (QD), when talking about procedures. A closer study of the QD shows that it provides several general checklists and critical questions to assess when working with different areas of the business. In order to ensure quality certain standards are followed and all suppliers should satisfy certain quality certifications, and SKF suppliers should have specified ISO-certifications.

Procedures are not always followed, and sometimes debated. An observation of the procedures in "Production" confirm that it is common practise in "Production" to register material used in the manufacturing at the end of the process, when an order has been completed, instead of when the manufacturing is initiated as the procedures state. "Production" argues that there are unnecessary steps associated with the registration procedures as employees have to register used material in one view, just to register the product as finished in another view.

A lot of work at the business unit is based on subjective estimations. This concerns work during the initial part of the business process as well as work in the main part of the business process. It is particularly common when assessing new business opportunities, receiving goods and shipping products. Subjective estimations are used by a "Business Support" respondent who explains that new business opportunities are evaluated based on subjective estimations, and predefined evaluation models are not used. As there is no goods control in the "Goods Reception" the person

staffing the function views the delivered goods and makes a personal estimation of whether or not the delivery appears to contain the right kind, and amount, of items. The work is based on a good understanding of components and products. This is also the case for "Shipment". Without good knowledge of the product assortment, a lot of additional time would be spent searching for the right products to ship. The "Shipment" employee explains that he often checks the products one last time to assure the quality before they are shipped off.

The time consumed by some aspects of the business varies a great deal. Developing business offers takes a day up to a couple of weeks, plus one or two weeks waiting for suppliers. In production the manufacturing of a product takes anything from five minutes to 40 hours. The matter is further complicated by production times for Systemhouse not being accurate, and the actual production capacity often being a lot different from planned capacity.

An interviewee stresses the importance of following procedures in order to make sure that tasks are carried out in a correct manner. Sometimes all the required steps of a routine are not performed, e.g. because of time constraints or unawareness. When routines are not followed accurately, different problems emerge later in the business process. The respondents unanimously agree that a lot of unnecessary time is spent searching for the root causes of problems.

There are sometimes routines that are not followed. "Business Support" maintains that there are certain procedures for ensuring that products meet specifications, but these are not always followed. Also, when evaluating the attractiveness of businesses opportunities there are some criteria to be considered, but the decisions are based on subjective estimations ("a finger in the air"). Nor are procedures followed when employees choose to order on an overhead account instead of registering components in M3, says a "Purchase" employee.

Currently, there are few role descriptions. There is only one employee mentioning a document listing all the work tasks that should be carried out by "Supply Chain". Another respondent explains that there used to be detailed role descriptions but this was a long time ago. Today the respondent is not sure of exactly what his work should include. Two respondents talk about the QD accounting for the different roles of employees and responsibilities, stating what function is responsible for what task.

A search in the QD did not result in any specific role descriptions, but general guiding documents for different functions. The unit is currently updating the QD, taking the latest re-organisation into account. One respondent believes it is important to have an updated QD that specifies how different matters should be handled. Although many functions have clear responsibility areas in large, there are activities pointed out during interviews were clarifications of the functions' responsibilities are required.

An area with many disparate opinions regarding responsibilities concern the uploading of product structures in M3. Many state that "Product Engineering" is responsible for uploading and making changes to the product structure, but sometimes "Business Support" creates new article denominations in M3. Many interviewees also believe that "Purchase" is responsible for adding all the additional information required about the components and uploading agreements.

It becomes more troublesome when approaching work operations, e.g. contract work. Some employees claim that "Purchase", in collaboration with "Production", should add the information. Others argue that "Business Support" is responsible. "Business Support" explains that it varies from person to person who registers work operations. It is not clear if anyone should examine the registered information or what function is responsible for making sure that all components and the product have the correct status before the product is released.

During the development phase of new products, there is an area where roles, and the work tasks that the roles include, are not followed to a larger extent. "Purchase" feels that "Product Engineering" performs their work task of finding suppliers. In order to allow "Purchase" to make the best deals possible the component specifications should not be supplier specific.

It is continuously discussed which function should be responsible for driving things forward in projects and the business process: "Supply Chain", "Product Engineering", "Business Support" or some other function. A "Supply Chain" interviewee says "Supply Chain" is responsible for the main process running as planned and taking action if orders get stuck somewhere in the process. Another person working at "Supply Chain" explains that the function's responsibility ideally stops when orders have been confirmed and released. A "Business Support" employee makes sure to stay involved throughout projects in order to be kept up to date, and able to inform customers on progress in the projects.

Before the re-organisation in the end of 2015, there used to be appointed project managers (for all projects). In the current organisation that role has been abolished for all but the largest projects. The largest projects have an assigned project manager responsible for the project's time plan, but all personnel involved in the project have a personal responsibility. Many of the respondents are missing a dedicated project manager in the projects. Instead the different business lines own the projects, and all the participant are responsible for the results. According to an interviewee, "Business Support" decides on cost and time goals that "Product Engineers" and "Production" later needs to meet. Still, no one has the utter responsibility for ensuring that cost and time goals are met.

The functional roles have become more specialised after the reorganisation in 2015 and the creation of three business lines. As functions are divided according to business lines it is seldom possible to find back-up within the functions. This is especially true with regards to more experienced personnel. Experienced personnel possess knowledge of many different tasks. Both an experienced "Supply Chain" and "Purchase" employee explain that they can assist all the other employees within their function, but there is no one who can help them with their work tasks. Sometimes the business line manager or an employee working within the same function but in a different business line can assist when needed. The limited possibilities of receiving support when employees are absent makes the business vulnerable.

One of the interviewees is an assigned process owner, in charge of making sure that the business system works and reflects the organisation. The work includes making sure that the system supports the work of different departments and provide decision makers with correct and timely information.

Many of the interviewees are aware that there are ambiguities regarding responsibility areas. Work has been undertaken to clarify responsibilities, but the work was never finished. An interviewee claims that it turned out to be too much work associated with the task. As a result many roles are still unclear.

Another trend that can be identified is that responsibilities are shifting between functions. "Purchase" accounts for how the function has been forced to take on some of the responsibility for invoice matching, which used to belong entirely to "Finance". Also, employees recurrently perform others' tasks in order to speed up their own work. People from "Supply Chain" and "Shipment" who have worked at the unit for a long time often solve problems themselves instead of letting those who have made the mistakes solve them. This saves them time in the short run.

5.1.7 Measuring the Process

The "Finance" function uses KPIs to measure the performance of different functions and business lines, as well as the organisation overall, and a dashboard is used to assess selected KPIs on a monthly basis. SKF Actuation System measures KPIs within four different areas: shareholders, customers, business processes, and employees. The shareholder area includes measuring operating profits, cash flows, and cost of goods sold. The KPIs for the customer area are highly emphasised and the number of customer complaints and broken promises (BPs) are followed up in detail each month. The detailed follow up of BPs accounts for the orders that make up the list of BPs, but not for the underlying reasons for them. The business process area measures the production results, deliveries, material, variable wages, productivity, and stock turnover. The employee KPIs measure the number of employees and the number of accidents. It is important that the process generates timely and accurate information for decision making, for example regarding order books, shipments and deliveries, according to the process owner.

In addition to the KPIs, the functions' work is also assessed. These measurements sometimes cause tension between functions. According to an interviewee the performance measures encourage competition between different functions, causing problems when people are encouraged to run in different directions. "Supply Chain's" most important assessment criteria is to keep the stock level as low as possible, while "Purchase" should aim to minimise costs. The most efficient way to lower costs is to purchase large quantities. As a result the measurements are contradicting.

Many respondents mention reducing the number of BPs as the most important target. BPs are estimated based on the unit's ability to deliver what has been promised to the customer on time. Complaints are measured separately, and the absolute main reason for BPs to occur is that the delivery has not taken place within the time promised. One respondent believes the focus on limiting BPs causes the production planning to suffer. Instead of focusing on making the production as efficient as possible, the planning is time focused. This view is supported by "Production" personnel.

Two of the respondents raise the issue of working with short term goals, believing that management should work with more long term goals and not only focus on the result today. There are long-term strategies but not short-term action plans on how to reach the goals. It is believed that investments, impacting the result negatively short term, are required in order to update the product assortment and generate long term improvements. An interviewee state that it is important that all employees share the same goals and vision, which is not the case today. As changes have been made to the organisation the unit's focus has changed. Earlier there used to be more focus on "Production" but today the focus is mainly on financial figures and sales.

5.2 Employees

The following two sections account for employees' empowerment and involvement, including how they approach tasks and problems, and collaboration at the unit. When addressing collaboration, the exchange of information and knowledge is considered.

5.2.1 Employee Empowerment and Involvement

The interviewed employees provide different perspectives on aspects related to their work. A common opinion is that responsibility is not assumed by employees in a desired manner, whereas

many account for different methods used for ensuring quality in their work. Ways to influence the work is discussed and personnel also explain how they engage in problem solving.

Some employees express frustration with what they experience to be lack of responsibility for work tasks and quality assurance among colleagues, and feel that engagement can be encouraged more efficiently in the organisation. Problems are pushed forward in the process as employees let go of unfinished tasks and several employees feel that there is a lack of interest in solving problems. "Fast and wrong" is used by an interviewee to describe how many people at the unit work. In a new project the ambition has therefore been to perform tasks right from the beginning, in order to ensure quality and improve the efficiency of the project. Interviewees emphasise that the organisation depends on everyone performing their tasks properly.

Functions accuse each other of lack of commitment to tasks. It is argued that some functions are not committed to providing customer value, and sometimes functions do not engage each other in the work. "Production" feels that the function is not asked to contribute in the development of new products or listened to when they provide improvement suggestions, neither does the function receive all relevant information. There are also concerns connected to the outsourcing. Many interviewees experience that no one wants to assume the responsibility for solving problems connected to tasks that have been outsourced.

Absence among employees significantly impacts the production capacity. It is a common problem that "Production" personnel is absent. The knowledge among the employees in the manufacturing is very specific and everyone cannot produce all products, making the business vulnerable. In order to be able to produce certain products employees have to pass different development steps, earning them a higher salary. As more steps are mastered one has to be prepared to help out in different areas. Being so, some believe that "Production" personnel is not motivated to reach higher development step. This creates problems when few people have the knowledge of how to build certain products. Some in "Production" say that they would like to learn more and reach a higher development step, but because of the high workload in "Production" there is no time for the necessary education. It is not uncommon that the actual production capacity is lower than the planned capacity due to personnel being ill or attending training, and absence often occur on short notice and results in backlogs.

What motivates employees differ on an individual level. An important motivational aspect among the interviewees is to have the opportunity to impact their own work. Another motivational aspect is positive feedback from management and colleagues when a job has been well carried out. Well performed tasks can include saving the company money, or simply imply carrying out activities according to set cost and time frames. The colleagues are mentioned as a strong motivational factor, and being part of a context. It is also stated that it is important to share a common goal, and feel that the organisation is moving forward. Finally, having satisfied customers is put forth as a motivational factor. When it is sometimes felt that all employees do not engage themselves in their work in order to deliver value to the customers, it can be demotivating.

Some employees express frustration that management does not heed suggestions. Some employees explain that the ability to impact feels limited, as management encourages suggestions but provide little or no feedback following the suggestions. An employee was asked for input on goals for cost reductions. When the new goals were announced no consideration had been taken to the opinions put forth by the interviewee, and it was not explained why this was the case. Not being able to significantly impact the goals of the own function can be demotivating, explains the interviewee. Contrasting the view of frustration regarding the lacking opportunities to influence, some employees feel that they have the freedom to structure their work as they see fit. With the

new business lines, the common perception appears to be that it is easier to impact in the smaller groups that the new business lines imply.

Employees use different methods for ensuring the quality of their work. "Purchase" uses different reports to monitor delivery precision and price deviations for suppliers in order to ensure quality. "Supply Chain" uses different pages and queries in M3 to follow up on orders. A "Supply Chain" employee also reminds suppliers of upcoming orders and prints lists of delayed orders to simplify follow ups.

One way to make sure that processes in M3 work is to test run orders in a M3 test environment. "Business Support" documents work in order to have traceability and make sure that work is carried out as agreed upon. According to a "Product Engineer" respondent project time plans and gates help to ensure quality. Also, asking colleagues to check product structure's once they have been built in M3 helps to assure quality. "Shipment" always makes sure to do a last check, to see that everything looks alright, before sending off orders. Documenting work and the four eyes principle help to ensure quality across functions and business lines.

There is a general opinion that the business unit can become better at long-term problem solving. An employee explains that there is a lack of willingness to solve problems at the unit, and functions do not help each other in solving difficulties they encounter. Another employee feels that the new business lines make it easier to acknowledge different problems and solve them together. Still, improvement suggestions can be hard to implement. Many employees account for how the unit only solves immediate problems and does not work strategically for the future. During the interviews many employees explain that they solve problems as they arise, the best they can, and sometimes ask for help from colleagues. Several experienced employees account for how they solve problems and perform tasks that should really be carried out by other functions. The reason is that it takes too much time to wait for the person responsible to carry out the task.

There are many problems associated with the outsourcing of finance tasks. Problems encountered by the outsourcing unit, related to the matching of invoices and orders, are often sent back and forth between functions and employees seem reluctant to assume responsibility for the problems. Also, it is often unclear where the problem was caused. "Finance" used to take care of all payment related problems, but with the outsourcing difficulties have emerged when it comes to knowing who is responsible for solving different problems. "Purchase" feels that the main problem associated with the outsourcing of finance tasks is that no one takes responsibility for managing problems associated with it.

5.2.2 Collaboration and Information Exchange

The collaboration and information exchange within the organisation and with suppliers and customers work to varying degrees. Some employees feel that the communication can be improved, and positive and negative aspects of the new business lines are brought up when discussing communication and knowledge exchange.

"Business Support's" work includes significant interaction with external and internal parties. When evaluating a business case "Business Support" tries to find out more about the business opportunity form the customer, in order to better understand the future prospects associated with the business, i.e. the possibilities for additional future orders. In order to best understand business possibilities the function puts effort into being up-to-date about the business unit. There is a desire to be more proactive towards customers, and provide suggestions of what customers might

need instead of simply answering requests. Internally, "Business Support" aim to keep other functions, such as "Purchase" and "Production" informed about information from customers, so that they are aware of potential new businesses. Still, a "Business Support" employee feels that the function can become better when it comes to sharing information with other functions.

Collaboration and knowledge exchange is important during projects and product development. "Purchase" and "Product Engineering" both agree that they work closely together and provide each other with necessary information, as they are dependent on each other in their work. "Purchase" requires component specifications in order to be able to find suppliers, and "Product Engineering" needs to know what components are available on the market. When the information exchange between the functions works well, it significantly simplifies the work. Sometimes there are conflicting interest between functions during the development phase. "Product Engineering" wants products to be more complicated and have a "cool-factor", whereas "Production" wants products to be easy to produce, and the collaboration between the functions is often limited.

The main process also contain collaboration and information exchange. Information exchange repeatedly occur with regards to orders and components. "Supply Chain" is responsible for making sure that components needed are available at production start. If this turns out not to be the case, "Production" informs "Supply Chain" so that the supplier can be contacted. Sometimes the material has indeed been delivered, and "Supply Chain" must search for it manually. If the delivered material is not visible in M3 something may have gone wrong in the "Goods Reception". It also happens that finished goods are not visible in the system. When an error is discovered, "Supply Chain" or "Shipment" must find out what has happened in order to correct the error, find the products and have them delivered to the customer.

If there are more serious problems with suppliers "Purchase" should be informed by "Supply Chain", which manages the daily contact with suppliers. "Purchase" feels that "Supply Chain" should take a more active role in communicating order deviations when they occur, especially in the case of price deviations. This allows for renegotiations with suppliers. If "Supply Chain" does not acknowledge deviations, neither informs "Purchase", the order confirmation from the supplier with the faulty information is automatically accepted.

Sometimes the collaboration and communication between "Production" and "Supply Chain" is not optimal. The morning meetings in production that both functions attend, are considered important forums for information exchange. "Supply Chain's" views on the collaboration diverge. A "Supply Chain" employee feels that "Production" does not share information about problems in manufacturing, whilst "Supply Chain" provides information about late deliveries from suppliers, during morning meetings. Another "Supply Chain" employee feels that the collaboration is well-functioning, and the daily meetings provide a forum where problems are handled. "Production" personnel, on the other hand, feels that "Supply Chain" does not share all the relevant information with them. Sometimes, "Production" informs that it will not be possible to produce all relevant orders, the same day as the orders are supposed to be shipped. Consequently, customers often receive the information about delays late.

Urgent orders are sometimes subject to communication predicaments. Pressing orders are sometimes finished late in the day, without anyone informing "Shipment". If an order is to be shipped the same day, it has to be finished around two o'clock in the afternoon, and some manufacturing personnel appear to believe that orders can be shipped the same day regardless of what time during the day the order is finished. It is important that "Shipment" is informed about highly prioritised orders. If "Shipment" is not staffed when "Supply Chain" or "Production" intend to inform about an urgent order they may forget to forward the information. At other

times, "Supply Chain" informs shipment about urgent orders but manufacturing personnel does not inform when the order is finished and ready for shipment.

In general, the views differ regarding how well information exchange works in the organisation. Many feel that little information is shared between functions, and that the business unit could benefit from better communication. An employee compares the situation to a card game, people trade information for other information, contemplating that people have little trust in each other to handle information in a correct way. A common view is that feedback is not desirable per se, if everything works as planned, but unfortunately it seldom does. Others feel that they receive the information needed, sometimes because they make sure to attain the information they need, and many mention pulse and planning meetings as important forums for information exchange.

There are many different meetings, serving slightly different purposes but, with the overall aim to contribute to information and knowledge exchange within the business unit. During the meetings all employees have the opportunity to inform the people present about on-going matters. The meetings also provide an important forum for bringing up problems. During the meetings observed, a general notion is that it appears to be common that problems are brought up, their cause discussed, and consensus reached that the problems should not be repeated and something has to be done. However, there is no action taken to make sure that problems are not repeated, neither is anyone made responsible for making sure that the problems are not repeated. Another observation is that there is little engagement during the meetings. People generally wait for their turn to talk, and provide input when specifically asked for it.

Many consider the re-organisation into three business lines to have improved the communication between functions, but reduced the collaboration within functions. The benefits associated with business lines include: better team-spirit and collaboration, enhanced understanding of other functions' work, shortened communication paths and reduced reaction time when problems arise. The enhanced understanding of other functions cause many interviewees to believe that the overall business process is now being better understood. The benefits have been realised to various extents in the three business lines, and some people appear to have been better suited for work in separate functions, where more support related to the specific work tasks was available. The new structure impedes work within functions. As the business lines become more specialised and work separately, the opportunities to collaborate and achieve synergy are reduced. Only the most experienced personnel is able to provide back-up across business lines. Another critique raised concerns limited collaboration across business lines. The new structure promotes competition between the business lines, reducing the feeling of being one company.

The introduction of the three business lines was accompanied by a refurnish of the office space. One of the business lines was re-located to an open office area, whereas the other two business lines were grouped together but all employees were given their own cubicle. From the interviews it appears that the business line located in the open office area has benefitted the most from the new business lines.

5.3 Summary of Empirical Findings

The empirical findings are summarised in the table below (Table 8). The table is structured according to the main categories of the theoretical framework introduced earlier in the thesis. The summarised findings provide guidance in the discussion, in the next chapter.

Table 8. Summary of emperical findings

	Empirical findings
Processes	
Business processes	- Insufficient understanding of the business process - No mapping or documentation of the process - Employees experience lack of resources
Measurements	- Measurements are used to monitor the process (e.g. KPIs) - Cause tension between functions - Monthly follow ups - Short term focus - Focus on accounting information - Long term targets but no operational plans
Standardisation	- Information in M3 not always in place or correct - There are not always clear procedures - Existing procedures are not followed - Tasks are sometimes unclear (few documents) - Unclear roles and responsibilities (few documents)
Tacit and explicit knowledge	- A lot of tacit knowledge
People	
Empowerment and involvement	- A lot of absence - Tasks are performed "fast and wrong" - Lack of interest for problem-solving - Motivational aspects include being able to impact, colleagues, achievement - Management does not heed suggestions - Quality is ensured with help from colleagues, systems and additional reviews
Boundary spanning	- A lot of interaction between functions - Regular meetings provide interaction points - Communication can be improved The business lines have: - Improved collaboration between functions - Reduced communication within functions

6 Discussion

In this chapter the empirical findings are contrasted against the theoretical framework and expanded upon, in order to explain how problems in the process are connected to problems for "Finance", and to guide recommendations on how to improve BE efforts considering both processes and people. A summary of the comparison can be found in Table 9. The focus will be on aspects considered of particular interest. The theoretical framework is drawn upon when assessing problems in the process, providing insight into how well existing theories can help in explaining problems related to BE in the business process.

6.1 Perspectives on the Process

The study reveals that many of the employees appear to lack an understanding of the complete process. Instead employees are experts on their own work tasks and are well familiar with the work of functions located close to their own in the process. The lack of overall understanding implies that knowledge about how functions' work effect the overall process, and the "Finance" function's work, is lacking. The results show that there is no established process flow, thus making it difficult for employees to gain a holistic understanding of the business process in keeping with findings presented by Kirchmer (2011). Concurrent with Lee and Dale (1998), Harrington, (1995) and Zairi (1997), the study shows that process improvements may be hard to accomplish without an established business flow, as flowcharting provides the basis for BPM efforts. However, some improvements of the process may be possible to accomplish, mainly based on establishing a consensus of the process.

The mapping of the business process shows that the business system, M3, links functions together and provide connectivity, as described also by Quinn et al. (1996). However, the study further revealed that people appear not to understand the benefits associated with the system, they are less inclined to embrace the interconnectivities embedded in the system. The system could be better adapted to the organisation's current needs. Nevertheless, the results indicate that if employees where more susceptible to the benefits of the system it is possible that it would be better used and could provide the organisation with a head start.

6.2 Problems in the Process

There are many different problems in the process, but it can be hard to distinguish between cause and effect. The following discussions attempt to clarify potential connections between problems and how these impact "Finance". The problems are illustrated in Figure 14, and their effects on "Finance" are illustrated to the far right, stated as explicit problems or BPs.

In the empirical findings the consequences of optimistic time and cost planning, including involving other functions too late in the process, were mentioned. These problems can be elaborated on. Increased costs associated with additional resource consumption and more expensive purchases from suppliers cause budget deviations - If the price of the product is based on inaccurate assumptions the effect will be reduced profits (Figure 15). Delays may negatively affect all subsequent functions' work, requiring immediate attention ahead of other activities. "Fast and wrong" is already used to describe the work at the business unit, and adding additional time pressure to activities could result in more errors.

Table 9. Overview of correspondence between theoretical framework and empirical findings

	Important aspects according to the theoretical framework	**Status as shown in empirical findings**	**Discussion (correspondence)**
<u>Processes</u> Business processes	- It is important to have a holistic understanding of the company's processes - Mapping and documenting the process and its activities can improve the holistic understanding	- Insufficient understanding of the business process - No mapping or documentation of the process	**No correspondence**
Measurements	- Measurements are used to plan, monitor and control processes - Processes should be assessed and measured in order to be improved (e.g. KPIs can be used) - Information is sometimes too focused on accounting, and lagging	- Measurements are used to monitor the process (e.g. KPIs) - Cause tension between functions - Monthly follow ups - Short term focus - Focus on accounting information - Long term targets but no operational plans	**Some correspondence**
Standardisation	- Tasks and procedures should be documented, and the documents followed - Variability can be reduced and efficiency increased - Enables the identification and reduction of waste, reducing costs - There should be clear roles and responsibility areas	- Information in M3 not always in place or correct - There are not always clear procedures - Existing procedures are not followed - Tasks are sometimes unclear (few documents) - Unclear roles and responsibilities (few documents)	**No correspondence**
Tacit and explicit knowledge	- An organisation should balance tacit and explicit knowledge	- A lot of tacit knowledge	**Some correspondence**
The table continues on the next page.			

Table 9 continued.			
People Empowerment and involvement	- Critical to the success of BEMs - Motivates commitment to tasks - Employees should engage in long-term problem solving - The person closest to a problem should solve it - Motivates employees to achieve what the organisation expect - Positive experiences associated with tasks motivate - Strategic and operational plans should be communicated to employees	- A lot of absence - Tasks are performed "fast and wrong" - Lack of interest for problem-solving - Motivational aspects include being able to impact, colleagues, achievement - Management does not heed suggestions - Quality is ensured with help from colleagues, systems and additional reviews	<mark>Some correspondence</mark>
Boundary spanning	- Transfer of knowledge/information/ideas across boundaries - Collaboration across functional boundaries - Improves productivity and decision-making - There should be a knowledge integration structure - Boundary spanning is improved when people closely interact	- A lot of interaction between functions - Regular meetings provide interaction points - Communication can be improved Business lines have: - Improved collaboration between functions - Reduced communication within functions	<mark>Some correspondence</mark>

Several explanations to the optimistic time and cost planning are hinted at in the study results. The planning might be realistic to large extents but running overdue was found to be a problem, suggesting this to be a result of ambiguity in the development process. Subjective evaluations, lack of overall responsibility, and tasks being carried out in different ways from time to time indicate, in accordance with Marksberry et al. (2011), that standardisation is lacking, and that there are no clearly defined procedures for performing the work. Chiarini (2013) suggested that without standardisation unknown waste, such as waiting time, cannot be reduced. This is further elaborated on by Toyota (1998) where procedures are used to illuminate problems and waste in the process. Addressing potential set-backs in the process could in turn, consistent with Santos et al. (2002), improve the performance of tasks, and reduce the variability in performing tasks, resulting in more consistent and accurate planning as suggested in LEI, (2008). It is then possible that the time for performing tasks will be reduced, but even if procedures will take longer than initially expected, the insights could help to guide realistic time planning.

Business Support	Product Engineering	Purchase	Supply Chain	Goods Reception	Production	Shipment	Finance	Risk of BP
Optimistic cost and time requirements	Shortage of time in the development process	Lack of time to negotiate favourable deals	Expensive components are ordered			Products are not shipped on time	1. Expensive components impact the result 2. Costs associated with additional resource requirements	X
Late involvement of other fuctions	Shortage of time in the development process	Lack of time to negotiate favourable deals	Expensive components are ordered			Products are not shipped on time	1. Expensive components impact the result 2. Costs associated with additional resource requirements	X
	Components specified according to perferred suppliers' specifications	Lack of time to negotiate favourable deals	Expensive components are ordered				Cost and time goals are not met	X
Incomplete registration of product structure	Incomplete registration of product structure	Incomplete registration of product structure	1. Problems associated with ordering material 2. Too optimistic delivery dates are promised	Material not recieved on time	1. Material not avalilbe at production start 2. Insufficient manufacturing instructions 3. The cost of consumed resources is not accurate 4. Problems associated with marking the products as finished, status 90 5. Products are not finished on time	1. Products are not showed as ready for shipment 2. Problems associated with shipping and receiving products sent to and from lego work 3. Products are not shipped on time	1. Cost for products is not accurate 2. Profit margin is reduced 3. Amounts in M3 are not accurate 4. Difficulties to match invoices with orders 5. Costs associated with additional resource requirements	X
		Material is ordered on over head account					6. Difficult to track costs	
		Incomplete information about suppliers					Difficulties to pay invoices	
			Too optimistic delivery dates are promised	Material not recieved on time	Products are not finished on time	Products are not shipped on time		X
		Nagotiations are not initiated with suppliers	Order confirmation note is not checked	Order quantities recieved may be inaccurate			1. Wrong prices may be accepted 2. Difficulties to match invoices with orders	
			Production planning program is not used		1. Production is not the most efficent 2. Products are not finished on time	Products are not shipped on time	Difficulties to follow up production costs against plan	X
			Orders are based on inaccurate stock levels	Goods reception based on delivery note	Components not avalible at production start		Inaccurate stock levels	X
				No goods control	Components are not of sufficent quality	Products are not shipped on time		X
			Too optimistic delivery dates are promised		Planned and actual production capacity differ	Products are not shipped on time		X
			Orders are based on inaccurate stock levels		Withdrawl of goods are not registered at the start of production		Material is not registered as WIP	
					Products are not register as finished, status 90	1. Products are not shown as ready for shipment 2. Products are not shipped on time		X

Figure 14. Pitfalls and problems in the business process

Other potential causes of time and cost deviations include lack of overall responsibility and no information sharing. As there are few designated project managers and responsibility for tasks are assumed on an individual basis, the employees, according to the definition of Wagner (1994), are empowered. However, as described in EFQM (2016d), people management includes assessing peoples' work and rewarding them for contributed value, something that appears to be largely missing in this case. Lack of assessment, and not holding people responsible for time and cost deviations, will hamper employees' motivation as the management, as described in the study, appears indifferent to their performance. This non motivational factor is also described by Thomas and Velthouse (1990).
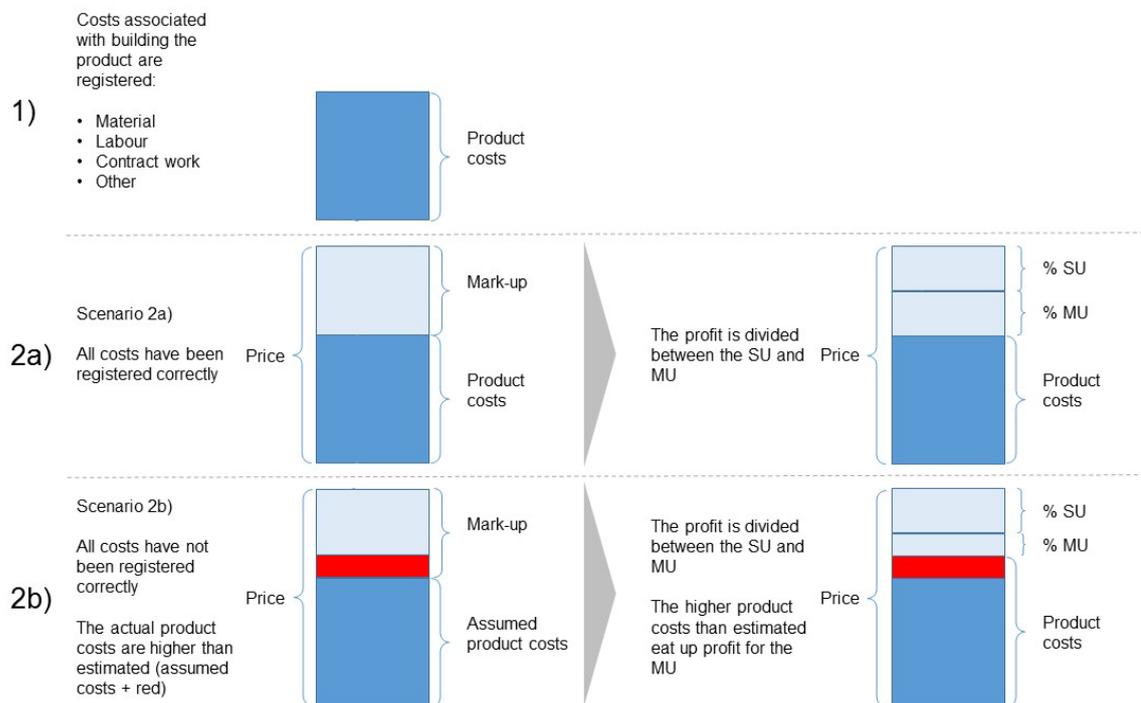
Figure 15. How well product costs are appreciated and registered impacts the manufacturing unit's (MU's) share of the profit

The research shows that the product structure in M3 causes many additional problems in the business process, making it an interesting problem to discuss in more detail. Problems associated with an incomplete product structure requires extra work later in the process, consuming additional resources and increasing the risk of late completion of orders. As M3 is used for registering costs for new products this results in major consequences for the unit's results. If the customer offer is based on inaccurate information, e.g. not taking subcontracting work into account, and the actual costs for supplying the product are higher than estimated, then the unforeseen costs could reduce the profit (Figure 15). When putting together an offer, "Business Support" should consider costs even if they are not registered in the system, but the risk of overlooking costs increases when they are not correctly registered.

Placing orders on an overhead account reduces traceability and can complicate matters for "Finance" when performing monthly follow ups on costs. This occurs when article numbers in the product structure have not been registered on time. Time spent investigating costs and

allocating costs to different accounts in order to improve the reporting, requires additional work and this is waste that can be reduced, as accounted for by Chiarini (2013). Another problem related to the product structure concerns the registration of subindustry details. Inaccurate details complicate payments to subindustries, and requires "Finance" to search for the cause of the problem, consuming resources and creating waste.

This research shows that there are many possible causes as to why the product structure is not registered properly. Documented role descriptions for the staff are missing and it appears there is no consensus regarding whom is responsible for uploading the specifications for the different parts of the product, suggesting, in accordance with Marksberry et al. (2011), that work is largely unorganised and that standardisation can be improved,. In order for employees to assume responsibility and show discipline it must be clear what is included in their work, as described by Zairi (1997). Currently functions' tasks are not formalised and configured as they are supposed to be according to Hinings et al. (1967). Even so, the disinterest shown by employees to define the tasks and improve the process indicate that a TQM-culture as described by Lawler (1994) is missing. It is possible that the lack of engagement and unclarities regarding roles are mutually enhancing. The results indicate that it is hard for employees to feel empowered if it is not clear what they are supposed, or even allowed, to do, and without commitment little interest is shown regarding the work procedures.

Performing tasks designated to the other function indicate that roles and tasks need to be defined between "Product Engineering" and "Purchase", and standardisation, as stated by Hinings et al. (1967) improved. This takeover procedure described by Cross et al. (2015) as well, also occur due to limited understanding for the process and the other functions' purpose and, as described by Loremann and Richert (2013), little integration between the functions .

Ambiguities regarding responsibility areas are not sufficient to explain the problems associated with the product design, as the research also shows that it is sometimes unclear what tasks are supposed to be carried out altogether. Step-by-step guidelines, as suggested by Toyota (1998), can help to ensure that all the necessary tasks associated with the registration of the product structure are performed. The research shows that a clear account of what needs to be carried out, how it is to be carried out, and by whom it should be carried out, will help to structure the work, and improve standardisation and consistency, consistent with suggestions by Marksberry et al. (2011). This will also help to avoid other problems in the business process (Figure 14). As problems with the product structure are often recurring, and can result in increased expenditures and order delays, the research shows that this is an important matter to address promptly.

The study shows that too optimistic delivery dates is a common problem. Not being able to live up to customers' expectations could result in BPs and lost customers. It can be discussed if optimistic delivery dates are a source of additional problems or a symptom of other errors. It is shown that inaccurate information in the system causes the "Supply Chain" personnel to believe that unrealistic delivery dates are in fact reasonable. Inaccurate information concerns suppliers' delivery times and stock levels. If "Supply Chain" makes sure to check the information in the system they will realise when a delivery date is not realistic. Similar effects, increased costs and potential delays, derive from too specific component requests from "Product Engineering". When time is restricted, the risk of late deliveries to customers increase with more specialised components. Delivery dates also turn out to be unachievable because of insufficient communication between "Supply Chain" and "Production". Components are missing at production start as a consequence of inaccurate stock levels or caused by faulty planning. It also happens that "Production" does not have the production resources required to complete orders on time. As both "Supply Chain" and "Production" can be responsible for delays, it is important not

to engage in a "blame game". Matters can be explained, and problems solved, but it requires dialogue. Increased information sharing, in accordance with Cross et al. (2015) will improve collaboration between the functions, making the organisation more efficient. However, today there is disagreements about what information should be communicated. The results, in keeping with Cross et al. (2015), show that employees are reluctant to share information, slowing down processes and damaging the quality of decision making. The development phase for example requires employees to collaborate across functional boundaries in order to take advantage of different expertise, and to co-create knowledge regarding new products (and practices), as accounted for by Hawkins and Rezazade (2012). Employees participating in the study say that collaboration in the development phase does occur, and occasionally knowledge and information are shared to provide the benefits described by Cross et al. (2015) and Teigland and Wasko (2013). Therefore, it can be concluded that information sharing is not absent, but needs to be improved. Furthermore, it is shown in the study that without sufficient collaboration, employees are left to find necessary information on their own, bypassing the chance to increase productivity and streamlining the process, possibilities accounted for by Cross et al. (2015).

Inaccurate stock levels are among other things caused by "Goods Reception" registering goods based on the order, instead of on the delivery note. Not taking care to ask for a new delivery note is an indication of lack of commitment to the organisation, as described by Faisal and Al-Esmael (2014), but the results in this study also indicate "quick fixes" as results from too heavy a workload. The results also suggest that employees do not see how their work impacts on other functions', and as a consequence, consistent with findings by Lawler (1994), they engage in short-term problem solving instead of continuous improvements.

Another reason for inaccurate stock levels found in the study is that registrations in M3 are not always performed properly by "Production" personnel (Figure 14). Based on this "Finance" cannot follow up on WIP and costs in the "Production" function. The results show that employees in "Production" have the habit of registering used material when orders are finished, and that there is a lack of awareness of routines. The routines for registration in M3 are not clearly settled, and standardisation, as accounted for by Marksberry et al. (2011), is missing. The complaints about the registration steps indicate that it is not understood why they are necessary, and that the understanding of the process, as described by Lee and Dale (1994), is inadequate. Consequently this incorrect stock level information causes "Finance" to estimate the value of assets based on faulty information.

This study also shows that the same line of reasoning (as above) can be applied for the problem of products not being registered as finished by "Production" (Figure 14). When "Shipment" does not know the products are ready for shipment it creates waste in concurrence with the descriptions by Chiarini (2013), in terms of waiting time but also if the products have to be searched for manually,

In "Shipment" there is a high workload and products are not always shipped on time. Since the packing of the products requires employees to have specific product knowledge all employees cannot help out". Documenting work procedures in keeping with recommendations by Smith (2001), would allow more employees to help out in the "Shipment" function, removing the bottleneck of packing and shipping products.

The results also show that optimistic delivery dates are a result of product planning programs not being used. Differences between planned and actual production capacity, indicate lack of standards, as described by Marksberry et al. (2011). A planning program can help to optimise the usage of the production capacity, but there would still be the problem of planned and actual

production capacity differing. Using a production planning program provides a platform for improvements, as accounted for by Toyota (1998) and Marksberry et al. (1998), and if continuously updated it aids in determining the actual production capacity. Further knowledge of the program could aid in determining how planning criteria should be used, as it is possible that the optimal production planning suggested by the program could result in more BPs. The current set-up might seem optimal for the production manager, but the production planning becomes less transparent for personnel outside "Production" without standard planning procedures. Keeping a tacit approach shields information from others (Smith, 2001) and results in unnecessary meeting time - waste according to Chiarini (2013).

In the study it is found that the current absence of goods control is another potential source of problems for "Finance". Distinct from the other problems this is a set up that has been chosen. As such, the problem is interesting to expand upon. Without checking the goods upon arrival, it is hard to determine if the received goods correspond to the order, and/or are of the right quality, as accounted for by del-Rio Ortega et al. (2013). The quality might have been good in the past, but the past is irrelevant in this aspect. Without monitoring and control over the process it is hard to improve the goods reception, as stated by Lohrmann and Reichert (2013). Even without goods control, errors are sometimes detected by personnel. This indicates that the current set-up relies on the ability of experienced personnel to detect errors. Juran (1988) is concurrent with this study in stressing the significance of the costs associated with external failure. Even if faults are discovered, delays in manufacturing and deliveries causes BPs. When quality-problems are noticed late, the time when the business unit could have complained to the supplier might have elapsed, thus resulting in no compensation and a negative effect on the results. A possibility, without reintroducing goods control, could be to red-flag and monitor suppliers known for recurring errors, as suggested by "Production".

Some actions cause deviations between orders and invoices. The main reasons are: "Supply Chain" not always checking order confirmation notes, and "Goods Reception" sometimes registering deliveries based on the order. These could be seen as examples of lack of standardised procedures that creates a lot of waste for the "Finance" function when matching invoices, as described by Chiarini (2013). When deviations occur between the invoice being processed and the order, "Finance" has to search for the cause of the problem which takes a lot of unnecessary time.

Although many problems in the process affect "Finance's" work, there is also the other way around, i.e. "Finance" impacting other functions. In the research almost all employees talk about problems that have emerged because of the outsourcing of parts of the "Finance" function, which indicate that this is an area of interest for further investigation. In particular, no one appears to take on the responsibility for making the relations with the outsourced unit work, or to ensure that problems related to the outsourcing are solved. Even if people are keen to solve problems, it might be that they do not consider the problems related to the outsourcing part of "their" work. If the person closest to the problem should solve it, as suggested by Sun et al. (2000), it appears that in this case someone has to direct the problems to the person who can best solve them. Perhaps if people better understood how their work causes problems in the business process and impact "Finance", as accounted for by Kirchmer (2011), they would be more motivated to help in solving problems related to "Finance" problems.

6.3 General Aspects of the Business Unit

From the empirical findings, some aspects of general concern (for the "Finance" function) appear as interesting subjects for further discussion. All of these aspects impact "Finance" but sometimes in an indirect way. In order to improve BE and "Finance's" work, nurturing improvement suggestions and carrying out problem solving is essential. In order to excel it is also important to properly assess situations. Finally, "Finance's", and the entire organisations' work is impacted by functions' ability to collaborate. These general aspects will be elaborated below.

Improvement suggestions and problem solving make up general concerns. The study shows that there is a reluctance to engage in problem solving in the business unit among the employees. The focus is currently on "fire-fighting", opposing the desired workforce actions as recommended by Tuckman (1994). This leads to employees forwarding problems, resulting in troubles for the finance unit. The problems reoccur when the root cause is not eliminated.

There are different possible causes to lack of engagement among employees. Recurring errors, when problems are not addressed long-term, may demotivate people. Waste pile up as solutions are not optimised and have to be reinvented. Without defined roles and responsibilities it is not obvious who should be responsible for solving problems, as it is unknown who is working the closest to the source of the problem, as suggested by Sun et al. (2000). Even if the responsibility is delegated, some employees solve problems belonging to others in order to save time.

There are potential consequences associated with carrying out other functions' tasks. When employees perform other functions' tasks it may result in ambiguities of whom is actually responsible for carrying out the tasks. This opens for the possibility of a gradual shift in responsibilities. This is problematic in the case of new employees. If a task is not included in a(n) (insufficient) role description, there is a risk that the task will not be performed at all, and that the knowledge of how to perform it disappears. Currently personnel are self-though and teach new personnel in person which indicate that a lot of knowledge is transferred through socialisation, maintaining knowledge tacit as described by Nonaka (1991). This might also increase the risk that knowledge is lost.

This study shows that workforce engagement (helping to develop the organisation), as described by the Baldridge Performance Excellence Program (2015), is not in place. Employees do not make efforts to improve the business unit's work. Today there are concerns that "other functions" do not take responsibility for their work tasks. One solution to the reluctance to solve problems is suggested by Sun et al. (2000), to provide employees with more responsibilities

Implications of demotivation is given by an employee who talks about not being motivated any longer. Lacking motivation to act, as described by Meyer (2004). According to Ryan and Deci (2000) this implies amotivation, and reduced interest in problem solving and improving the business. However, the study also shows that there are many examples of intrinsic motivation among the employees at the business unit.

The findings in this study suggests that employees do not involve themselves in strategical questions. Implementing improvement suggestions may be easier if the employees were given greater power to impact decisions, as suggested by Sun et al (2000). According to Brown (2013) it is important to communicate the strategy and let employees speak their mind. The employees at the business unit are encouraged to speak their mind when they have problems or improvement suggestions, but their opinions are not properly acknowledged as management provides little

feedback on the improvement suggestions. The absence of feedback is the reason to why one employee has stopped contributing with improvement suggestion.

Another general aspect to consider is measurements. The research shows that the business unit follows up on KPIs on a monthly basis, which indicates a short term focus. It is possible that the long term investment called for by interviewees are justified, in order to update the product assortment. However, it can be debated how well equipped the unit is to care for additional resources. The existing difficulties, of which many have been discussed, indicate that the unit cannot administer large investments in a favourable way. Short term "black figures" could improve the confidence in the unit's abilities, and motivate the needed investments. Improving BE provides ways to better utilise resources. Reducing waste and streamlining the business will free resources on short terms, as accounted for by Tuckman (1994) and Chiarini (2013), perhaps even reducing the need for large investments. If work is carried out more efficiently, according to standards, people will have more time at hand. These efforts can be combined with redefined roles and responsibilities. "Product Engineering's" competence could be better put to use if they focus on product development, instead of carrying out administrative tasks e.g. registering components in M3. Smooth procedures could reduce costs, and less problem solving could allow "Finance" to better manage costs (HM Treasury, 2009). Procedures with the effect of reducing costs and allowing more focus on product development, will reduce the need for investments as well as motive funding.

The business process and the functions are currently assessed through the measurements of KPIs each month, as suggested by many researchers (Lee and Dale, 1998; del-Rio Ortega et al, 2013; Lohrman and Reichert, 2013). Using KPIs provide insights on the current performance and offer guidance on how to improve the business process (EFQM, 2016). Even though the measurements of the different functions might contradict each other they still enable control of the different functions' performance. Although the research suggests that the business unit could benefit from adding long term focus to the agenda, it can still be reasonable to follow up on measurements on a monthly basis in order to have control over processes. From the research it appears that the reason behind some figures, e.g. the causes of BPs, could benefit from further follow-up. Also, the follow-ups could be more pro-active by providing timely information, as suggested by Glykas (2011).

The goal to reduce the number of BPs corresponds well with employees' ambitions to provide customer satisfaction, and provides meaningfulness, as accounted for by Thomas and Velthouse (1990). Still, reasons for BPs are not accounted for in the monthly reporting, providing little guidance on how to improve the measurement. It also noted that no appointed person is ultimately responsible for the KPI. Poor opportunities to impact BPs may demotivate employees (ibid). Little motivation to strive for reduced BPs indicates that organisational commitment, as accounted for by Faisal and Al-Esmael (2014), is lacking. Interviewees mention several other goals besides reducing BPs, indicating that there is little consensus regarding where to focus business efforts. The lack of common goals and focus distorts employees' efforts, instead of guiding the achievement of goals and objectives, as described by Jeston and Nelis (2014). The research also show that there are goals that are not accompanied by operational plans, which could further reduce employee engagement, as accounted for by Brown (2013).

Another concern of general interest is the collaboration between, and within, business lines and functions. This becomes especially interesting in the light of the re-organisation carried out at the end of 2015.

The re-organisation into three business lines has instilled both positive and negative consequences. A positive outcome is improved knowledge integration, making functions more inclined to share information and ask questions within the business line. This result, concurrent with the findings of Bonner (2000), may be a result of persons from different functions being located closely together in an open office space. With better collaboration the understanding of the other functions work has increased, suggesting that knowledge is transferred across boundaries as a result of the collaboration, as accounted for by Cross et al. (2015). Improved knowledge integration structures improve individual performance, as shown by Teigland and Wasko (2003). The many meetings where different functions share information with each other is a contributing factor in improving the knowledge integration structure. However, the study shows that there is lack of engagement in meetings. This could be an indication that the personnel is not experiencing an environment where they feel encouraged to engage, as described by Tushman (1981), or that they do not feel involved and empowered.

Negative aspects with the business lines concern collaboration between the business lines and within the functions. The functions become more specialised in the business lines and potentially lose synergies and the possibility to back-up co-workers within the same function. Another possible consequence of more specialised functions is that more knowledge becomes tacit. The functions develop in different directions and without written instructions, and few people may be able to help in the work if needed, as accounted for by Smith (2001). Formally expressed knowledge and documented instruction allow more people to perform important tasks. Some feel that there are still clear boundaries between functions, which may hamper information sharing and reduce the transparency in the organisation. A well-established knowledge culture seems to be missing but redefining the processes to enhance knowledge sharing, as accounted for by Wah (1999), could benefit the organisation.

The business line that is located in an open office space is mentioned as the business line that has benefitted the most from the new organisation. This is in line with Bonner's (2000) findings that knowledge sharing is encouraged when people are located closely together, and it is possible that the communication in the other business lines could be improved by relocating the personnel into more open office environments.

Another area, separated from the business lines, which could also benefit from more explicit knowledge is "Shipment", which is currently dependent on listing experienced personnel. By documenting clear work procedures, as suggested by Smith (2001) the knowledge would become more explicit and allow others to assist the function. If more people have the knowledge to help shipment when many orders need to be shipped the risk for BP would decrease. In general, it appears that the organisation could benefit from a better balance between tacit and explicit knowledge, as described by Brown and Dugid (2000). Making more knowledge explicit could according to Cross et al. (2015) help to reduce collaboration overload.

The study shows that the functions in the process flow imply barriers in the process, as described by Edson and Shannahan (1991). For example, barriers hindering complete handovers exist during the development stage of new products (e.g. "Business Support" to "Product Engineers", "Product Engineers" to "Purchase", "Purchase to "Supply Chain"). From the interviews, many functions appear to have high internal focus, similar to Lee and Dale's (1998) findings.

Based on Lee and Dale (1998) and interview testimonies the encouragement of cross-functional collaboration and connection between functions can be improved. The problems with barriers indicate that a more process driven approach is needed, with clear expectations on what, and when, to hand over to the next function (Edson and Shannahan, 1991)

All employees provide examples of how they interact and exchange information with other functions, suggesting that formal information and knowledge sharing, as described by Tushman (1981) take place. However, the interactions are not always formally acknowledged, a lot of information sharing occurs on an informal basis, indicating that much boundary spanning is informal.

6.4 Concluding Discussion

During the research it has become apparent that standard procedures are often missing. The knowledge of the employees are therefore to a large extent tacit and the usage of explicit knowledge could provide more stability to the organisation (Brown and Dugid, 2000). Many theories acknowledge the importance of documenting standard procedures (Marksberry et al. 2011; Jang and Lee, 1998; Santos et al., 2002). Overall the documentation of tasks at the unit is not up to date and the extent to which tasks are perceived to be documented varies between interviewees. This suggests that documentation could be promoted and distributed more thoroughly. The existing documents provide mainly overall and standard instructions, and more specific instructions with more detailed work executions are requested by employees. This suggest that step-by-step guidelines, as described by Toyota (1998), are missing, even though essential for performance improvements. Recalling Berger (1997), in order for improvement measures to work standards are necessary. It is possible that the necessary foundation for making improvements is currently missing.

Employees are unsure of what tasks their roles include, indicating unclear role descriptions and a lack of standardisation. Unclear responsibility areas enhance turf mentality and functional boundaries as described by Edson and Shannahan (1991). Clearer responsibility areas would enhance employees feeling of empowerment.

There might however be a risk that employees do not feel motivated by standardised task where there is less room for innovative thinking (Brown and Dugid, 2000). To ensure that the business unit benefit from standardised procedures it is important that the employees are committed to these as Santos et al. (2002) suggest. It could therefore be useful to address the different motivational aspects and encourage employees to be involved when standardising the procedures of the business unit.

6.5 Prioritising Problems

Going about improving BE in the business process, different approaches to addressing problems can be taken. Many problems can be approached in similar ways, as the causes to the problems are related. A possible point of origin is to address the problems according to what procedures will be used to solve them, but a more appropriate approach for the case company may be to address the most urgent problems first.

The research has accounted for several problematic areas that significantly impact the organisation. An example is the problems related to the product structure, which appear to have significant impact on the organisation, potentially causing problems for all the functions subsequent to the development phase. This problem also requires a lot of resources to be resolved, since so many people are involved in the registration of the product structure. Considering all the aspects of the product structure, the problems are often recurring. This implies that this is an area that needs to be addressed promptly. The same line of reasoning applies to the problem of managing time and cost goals in projects. This problem may also

impact the entire organisation's approach to time and cost management, potentially encouraging a "laissez-fair" attitude. Therefore, this problem also requires immediate attention. That said, the other problems mentioned in the research such as the many problems associated with inaccurate information in the system (M3), also need to be addressed. The same goes for following procedures in general and sharing information.

The study shows that there are many areas where BE can be improved. If the case company commits to the task, address problematic areas and carry out work to improve BE, the company has the potential to improve the organisations performance.

7 Conclusion and Recommendation

In this chapter the conclusions drawn from the discussion of the empirical findings will be presented. The first section formulates which are the main conclusions to be drawn from the study, and the second section contains recommendations on how to address the conclusions. Finally, suggestions for further research are presented.

7.1 Conclusions

This section presents the conclusions drawn from the study. The conclusions explain how SKF Actuation System can improve BE and the conclusions serve to answer the research question: *"How can SKF Actuation System improve Business Excellence in its business process, viewed from the perspective of the "Finance" function, with regards to aspects of processes and people?"*

The case study of SKF Actuation System, has illustrated several company specific problems and phenomena related to the business process and BE. Contrasting the empirical findings against theoretical frameworks has provided insight into how SKF can improve its BE.

- In order to improve BE it is important to enhance the understanding of the business process at the business unit, so that employees understand how activities are interlinked and provide value.
- The business unit needs to better follow up processes and measurements.
- Standardisation should also be improved in order to provide clear procedures when executing tasks. Task assignment needs to be clarified as well as how tasks should be performed.
- Collaboration and boundary spanning have to be improved. Employees must collaborate to a larger extent and show more willingness to share information and knowledge with each other. Further, the collaboration within and between business lines must be improved, as need overall efficiency and well-founded decision-making.
- Finally, employees' involvement and empowerment needs to be strengthened. Employees need to engage in the organisation to a larger extent, commit to tasks and participate in long-term problem solving.

Theories on BE have been well applicable to the case company, and helped in finding potential improvement areas. However, the research shows that depending on the perspective there is some or no correspondence between theories related to BE and the way the business unit operates in the investigated areas.

Concluding, SKF Actuation System can improve BE in its business process by addressing aspects of processes and people as accounted for above. Striving for BE is a continuous process and a great effort, and these suggestions will help SKF Actuation System improve and progress in its pursuit of excellence.

7.2 Recommendations

This section on recommendations serves to provide the case company with more specific advice on how to go about improving BE in the business process. The recommendations are related to the research question *"How can SKF Actuation System improve Business Excellence in its business process, viewed from the perspective of the "Finance" function, with regards to aspects of processes and people?"*

The recommendations for improvements are based on the findings from the research, blue column (Table 10, blue columns). In addition to the overall recommendations, more specific suggestions on how the recommendations can be carried out are provided with a short term and a long term perspective (Table 10, white columns). These suggestions are examples of actions.

The recommendations focus on the main problems identified in the research, which call for immediate actions. The short term actions provide suggestions that can be carried out at once, and are easy to implement. The long term actions require more commitment of resources, but are deemed necessary in order to excel in the long run. Together, the proposed actions make it possible to move towards more long-term thinking and be proactive instead of reactive.

Table 10. Recommendations to the case company

General problems	Specific problems	Improve	Short term action	Long term action
Insufficient holistic understanding of the business process	Lack of understanding of how activities are interlinked	Create an overall understanding for the process	Justify the current process: E.g. put up the flowchart from this thesis on the office wall Explain the process to all existing and new employees	Assess and re-design the process E.g. assess the value creation in the main process Introduce roles with overall responsibility for the process
Insufficient Measurements	Short term focus No operational plans to follow-up Cause tension between functions	Follow-up measurements that guide long-term goals	Follow-up on measurements: E.g. investigate the reasons behind e.g. BPs Revise KPIs Discuss plans between functions	Assess and look over measurements: E.g. Look over access to more timely information Consider other KPIs Maintain plans and engage employees
Insufficient standardisation	Unclear tasks Routines are not followed Unclear responsibility areas Lack of time and cost management System information is inaccurate	Standardise procedures: -Roles (who) -Tasks (what) -Method (how)	Clearly state responsibilities and procedures: E.g. document requirements for the product structure Assign, and keep, personnel accountable for task fulfilments	Assess and evaluate existing internal standards, redesign procedures. Increase efficiency and free up resources: E.g. Simplify procedures Reduce the number of tasks

	Production planning software is not in use		Ask personnel to document their standard tasks	Reduce the number of people involved in tasks
Lack of boundary spanning	Not enough collaboration and communication Lack of information sharing	Create a knowledge sharing culture, encouraging collaboration	Enhance communication: E.g. position business lines in open office spaces Visualise important information Have common breaks for the entire organisation	Team collaboration based on trust: E.g. carry out team-building exercises Introduce "walking next to colleagues for a day"
Insufficient engagement	Lack of long-term problem solving	Increase focus on long-term quality	Avoid quick-fixes – encourage thorough problem solving: E.g. Agree on actions for problems during meetings Introduce problem-solving meetings Follow up on improvement suggestions	Become proactive instead of reactive E.g. improve processes to limit risks of problems Provide new products and services in advance of demand

7.3 Suggestions for Future Research

There are several suggestions for future research. The research focused on two aspects of BE, processes and people. For future research, all aspects of BE need to be investigated in order to provide a full understanding of how BE efforts in business processes can be improved. Further understanding of the subject could also be obtained by combining qualitative and quantitative research. As the research focused on a single case, future research could contribute to better understanding of the subject by examining a number of different cases. Furthermore, problems that were not related to the "Finance" function were not addressed in the study and the research focused on back-office activities. Investigating other functions more thoroughly and performing studies of BE in manufacturing processes are needed to develop a fuller understanding of the subject.

Further recommendations include to investigate the problems identified in this study more thoroughly. By analysing specific problems in greater depth, the causes and effects will be better understood, thus providing the case company with more long-term and sustainable solutions to the problems.

References

Abdullah, A. (2010) "Measuring TQM Implementation: a Case Study of Malaysian SMEs", *Measuring Business Excellence,* vol. 14, no: 3, pp. 3–15.

Adebanjo, D. (2001), "TQM and Business Excellence: is There Really a Conflict?", *Measuring Business Excellence,* vol. 5, no. 3, pp. 37 – 40.

Aguilar-Savén, S. R. (2004) "Business process modelling: Review and framework", *International Journal of Production Economics,* vol. 90, no. 2, pp. 129-149.

Al-Khalifa, K. and Aspinwall, E. (2008) "Critical Success Factors of TQM: a UK Study, *International Journal of Productivity and Quality Management,* vol. 3, no. 4, pp. 430-443.

Aldrich, H. and Herker, D. (1977) "Boundary Spanning Roles and Organization Structure", *Academy of Management Review,* vol. 2, no. 2, pp. 217-230.

Andersen, P. H. and Kragh, H. (2015) "Exploring Boundary-spanning Practises Among Creativity Managers", *Management Decision,* vol. 53, no. 4, pp. 786-808.

Asif, M. and Gouthier, M. (2014) "What Service Excellence Can Learn from Business Excellence Models", *Total Quality Management,* vol. 25, no. 5/6, pp. 511-531.

Baldridge Performance Excellence Program (2015) "Baldridge Excellence Framework"

Berger, A. (1997) "Continuous improvement and kaizen: standardization and organizational designs", Integrated Manufacturing Systems, vol. 8, no. 2, pp. 110-117.

Bergman, B. and Klefsjö, B. (2010) *Quality from customer needs to customer satisfaction,* 3rd edn, Studentlitteratur, Lund.

Bonner, D. (2000) "Knowledge: From Theory to Practise to Golden Opportunity", *American Society for Training and Development*, pp.12-13

Boulter, L., Bendell, T. and Dahlgaard, J. (2013) "Total Quality Beyond North America: A Comparative Analysis of the Performance of European Excellence Award winners", *International Journal of Operations & Production Management,* vol. 33, no 2, pp.197 – 215.

Brown (2013) "Managing Challenges in Sustaining Business Excellence, *International Journal of Quality & Reliability Management,* vol. 30, no. 4, pp. 461-475.

Brown, J.S. and Dugid, P. (2000) "Balancing act: how to capture knowledge without killing it", *Harvard Business Review,* May-June, pp. 73-74, 76, 78-80.

Bryman, A. and Bell, E. (2011) *Business research methods,* 3rd edn, Oxford University Press, Oxford.

Burnard, P., Gill, P., Steward, K., Treasure, E. and Chadwich, B. (2008), "Analysing and Presenting Qualitative Data", *British Dental Journal,* vol. 204, no. 8, pp. 429 – 432.

Bou-Llusar, J. C., Escrig-Tena, A. B., Roca-Puig, V., and Beltrán-Martín, I. (2009) "An empirical assessment of the EFQM Excellence Model: Evaluation as a TQM framework relative to the MBNQA Model", *Journal of Operations Management*, vol. *27*, no. 1, pp. 1-22.

Caldwell, F. D. and O'Reilly III, A. C. (1982) "Boundary Spanning and Individual Performance: The Impact of Self-Monitoring", *Journal of Applied Psychology,* vol. 67, no. 1, pp. 124-127.

Chang, P-L., Chen, W-L. and Tsa, C-K. (2003) "Achieving Manufacturing Excellence Through Proactive Practices: a Case Study of Taiwan's IC industry", *Measuring Business Excellence,* vol. 7, no: 4, pp.44 – 49.

Chiarini, A. (2013) *Lean Organization: from the Tools of the Toyota Production System to Lean Office,* Springer Milan, Milano.

Creswell, J.W. (2007) *Qualitative inquiry & research design: choosing among five approaches,* 2nd edn, SAGE, Thousand Oaks.

Cross, R., Ernst, C., Assimakopoulos, D. and Ranta, D. (2015) "Investing in Boundary-spanning Collaboration to Drive Efficiency and Innovation", *Organizational Dynamics,* vol. 44, no. 3, pp. 204-216.

Dahlgaard, J. J., Chen, C-K., Jang, J-Y., Banegas, A. L., Dahlgaard-Park, S M. (2013) "Business Excellence Models: Limitations, Reflections and Further Development", *Total Quality Management,* vol. 24, no. 5/6, pp. 519-538.

Dahlgaard, J. J., Kristensen, K. and Khanji, G.K. (2002) Fundamentals of Total Quality Management, Taylor & Francis, London

Dahlman, C. (2007) "Technology, globalization, and international competitiveness: Challenges for developing countries", Industrial Development of the 21st Century: Sustainable Development Perspectives, Department of Economic and Social Affairs, United Nations, pp. 29-84. Available from: http://www.un.org/esa/sustdev/publications/industrial_development/full_report.pdf [2016-05-14]

Dean, J.W. and Bowen, D.E. (1994) "Management Theory and Total Quality: Improving Research and Practice through Theory Development", *The Academy of Management Review,* vol. 19, no. 3, pp. 392-418.

Dubey, R. (2015) "An Insight on Soft TQM Practises and Their Impact on Cement Manufacturing Firm's Performance. Does size of the cement manufacturing firm matter?" *Business Process Management Journal,* vol. 21, no. 1, pp. 2-24.

Edson, J. and Shannahan, R. (1991) "Managing Quality Across Barriers", *Quality Progress*, vol. 24, no. 2, pp. 45-47.

EFQM (2016a) "What We Do", Available from: http://www.efqm.org/what-we-do [2016-03-02]

EFQM (2016b) "Fundamental Concepts", Available from: http://www.efqm.org/efqm-model/fundamental-concepts [2016-01-18]

EFQM (2016c) "Processes, Products & Services, Available from: http://www.efqm.org/efqm-model/efqm-model-in-action/processes-products-services [2016-03-02]

EFQM (2016d) "People", Available from: http://www.efqm.org/efqm-model/efqm-model-in-action/people [2016-03-02]

Enquist, B., Johnson, M. and Rönnbäck, Å. (2015) "The Paradigm Shift to Business Excellence 2.0*", International Journal of Quality and Service Sciences,* vol. 7, no. 2/3, pp. 321-333.

Eskildsen, J.K. and Kanji, G.K. (1998) "Identifying the Vital Few Using the European Foundation for Quality Management Model", *Total Quality Management,* vol. 9, no.4, pp. 92– 94.

Eskildsen, J. K. and Dahlgaard, J. J. (2000) "A Causal Model for Employee Satisfaction", *Total Quality Management,* vol. 11, no. 8, pp. 1081-1094.

Escrig, A.B. and De Menezes, L.M. (2015) "What Characterizes Leading Companies Within Business Excellence Models? An analysis of "EFQM Recognized for Excellence" recipients in Spain", *International Journal of Production Economics,* vol. 169, pp. 362.

Gadenne, G. and Sharma, B. (2009) "An Investigation of the Hard and Soft Quality Management Factors of Australian SMEs and their association with firm performance", *International Journal of Quality & Reliability Management,* vol. 26, no: 9, pp. 865 – 880.

Gómez Gómez, J., Martínez Costa, M. and Martínez Lorente, Á.R. (2011) "A Critical Evaluation of the EFQM Model", *International Journal of Quality & Reliability Management,* vol. 28, no. 5, pp. 484-502.
Glykas, M. (2011) "Performance Measurement in Business Process, Workflow and Human Resource Management", *Knowledge and Process Management,* vol 18, no. 4, pp 241–265.

Hackman, R. J. and Wageman, R. (1995) "Total Quality Management: Empirical, Conceptual, and Practical Issues", *Administrative Science Quarterly,* vol. 40, no. 2, pp. 309-342.

Harrington, H.J. (1995) *Total improvement management: the next generation in performance improvement,* McGraw-Hill, New York.

Hassan, S., Wright, E. B. and Park, J. (2016) "The Role of Employee Task Performance and Learning Effort in Determining Empowering Managerial Practises: Evidence from a Public Agency", *Review of Public Personnel Administration,* vol. 36 no. 1, 57-79.

Have, P.T. (2008) "Review: David Silverman (2006). Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction", *Forum: Qualitative Social Research,* vol. 9, no. 1.

Hawkins, A. M. and Rezazade, M. H. M. (2012) "Knowledge Boundary Spanning Process: Synthesizing Four Spanning Mechanisms", *Management Decision,* vol. 50, no: 10, pp. 1800 – 1815.

Hendricks, K. B. and Singhal, V. R. (1997) "Does Implementing an Effective TQM Program Actually Improve Operating Performance? Emperical Evidence from Firms That Have Won Quality Awards", *Management Science,* vol. 43, no. 9, pp. 1258-1274.

Hinings, C.R., Pugh, D.S., Hickson, D.J. and Turner, C. (1967), "An Approach to the Study of Bureaucracy", *Sociology,* vol. 1, no. 1, pp. 61-72.

HM Treasury (2009), Operational Efficiency Program: back office operations and IT. Availible from: http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/d/oep_back_office_pu730.pdf [2016-02-09]

Ho, S and Fung, C (1994), "Developing a TQM Excellence Model", *The TQM Magazine,* vol. 6, no. 6, pp. 24 – 30.

Hsieh, A-T., Chou, C-H. and Chen, C-M. (2002) "Job Standardization and Service Quality: a Closer Look at the Application of Total Quality Management to the Public Sector", *Total Quality Management,* vol. 13, no. 7, pp. 899-912.

Jacka, J.M. and Keller, P. (2009) *Business process mapping: improving customer satisfaction,* 2nd edn, John Wiley & Sons Inc, Hoboken.

Jacobsen, D.I., Sandin, G. and Hellström, C. (2002) *Vad, hur och varför: om metodval i företagsekonomi och andra samhällsvetenskapliga ämnen,* Studentlitteratur, Lund.

Jang, Y. and Lee, J. (1998) "Factors Influencing the Success of Management Consulting Projects", *International Journal of Project Management,* vol. 16, no. 2, pp 67–72.

Jeston, J. and Neils, J. (2014). *Business process management.* 3rd edn, Routledge, Abingdon and New York

Juran, J. M. (1988) *Juran's Qaulity Control Handbook,* 4th edn, McGraw-Hill, New York

Juran, J. M. (1992)"Departmental Quality Planning*", National Productivity Review,* vol. 11, no. 3, pp. 287-300.

Klefsjö, B., Bergquist, B. and Garvere, R. (2008) "Quality management and business excellence, customers and stakeholders: Do we agree on what we are talking about, and does it matter?", *The TQM Journal,* vol. 20, no. 2, pp. 120-129.

Lawler, E.E. (1994) "Total Quality Management and Employee Involvement: Are They Compatible?", *The Academy of Management Executive*, vol. 8, no. 1, pp. 68-76.

Linton, J. (2007) "Process Mapping and Design", *Circuits Assembly,* vol. 18, no. 2, pp. 26-30.

Llewellyn, N. and Armistead, C. (2000) "Business Process Management: Exploring Social Capital Within Processes", *International Journal of Service Industry Management,* vol. 11, no. 3, pp. 225-243.

Lee, R.G. and Dale, B.G. (1998) "Business Process Management: a Review and Evaluation", *Business Process Management Journal,* vol. 4, no. 3, pp. 214 – 225.

LEI (2008*), Lean Lexicon*, 4rd ed., Lean Enterprise Institute, Cambridge.

Lengnick-Hall, C. (1996) "Customer Contributions to Quality: A Different View of the Customer-Oriented Firm", *Academy of Management Review,* vol. 21, no. 3, 791-824.

Lohrmann, M. and Reichert, M. (2013), Understanding Business Process Quality. In Glykas, M. (red). *Business Process Management,* Springer, Berlin, pp. 41-73.

Marksberry, P., Rammohan, R. and Vu, D. (2011) "A Systems Study of Standardised Work: a Toyota perspective", *International Journal of Productivity and Quality Management,* vol. 7, no. 3. pp. 287-303.

Meyer, P. J. (2004) "Employee Commitment and Motivation: A Conceptual Analysis and Integrative Model", *Journal of Applied Psychology,* vol. 89, no. 6, pp. 991-1007.

Miller, J. W. (1996) "A Working Definition for Total Quality Management (TQM) Researchers", *Journal of Quality Management,* vol. 1, no. 2, pp. 149-159.

Mull, D. C. and Jordan, W. J. (2014), "Boundary Spanning", *Reclaiming Children and Youth,* vol. 23, no. 3, pp. 56-59.

Nickell, S. J. (1996) "Competition and Corporate Performance", *Journal of Political Economy*, vol. 104, no. 4, pp. 724-746.

Nonaka, I. (2008) T*he Knowledge-creating Company*, Harvard Business Review, Boston

Pankaj, M. (2010) "An Award Journey for Business Excellence: the Case Study of a Public Sector Unit", *Total Quality Management and Business Excellence,* vol. 21, no. 12, pp. 1343-1364. .

Pavett, M. C. and Whitney, G. (1998) "Quality Values, Attitudes, and Behavioural Predispositions of Employees in Mexico, Australia, and the United States", *Thunderbird International Business Review,* vol. 40, no. 6, pp. 605-632.

Porter, L.J. and Tanner, S.J. (1996) *Assessing business excellence: a guide to self-assessment,* 2nd, eds, Butterworth-Heinemann, Oxford.

Powell, T.C. (1995) "Total Quality Management as Competitive Advantage: A Review and Empirical Study", *Strategic Management Journal,* vol. 16, no. 1, pp. 15-37.

Pugh, D.S., Hickson, D.J., Hinings, C.R. & Turner, C. (1968) "Dimensions of Organization Structure", Administrative Science Quarterly*,* vol. 13, no. 1, pp. 65-105

Quinn, J.B., Anderson, P., and Finkelstein, S. (1996), Managing Professional Intellect: Making the Most of the Best. In Harvard business review on knowledge management. Harvard business school, Boston, pp. 71-80.

Ryan, R.M. and Deci, E.L. (2000), "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being", *American Psychologist,* vol. 55, no. 1, pp. 68-78.

Samson, D. and Terziovski, M. (1999) "The relationship between total quality management practices and operational performance", *Journal of Operations Management,* vol. 17, no. 4, pp. 393-409.

Santos, A., Torres Formoso, C. and Tookey, J.E. (2002) "Expanding the meaning of standardisation within construction processes", *The TQM Magazine,* vol. 14, no. 1, pp. 25-33.

SKF (2016a) Available from: http://www.skf.com/uk/our-company/organization/skf-history/index.html [2016-02-01]

SKF (2016b) Available from: http://www.skf.com/uk/our-company/organization/index.html [2016-02-01]

SKF (2012), *Business Excellence*, SKF Koncernen

Smith, A. E. (2001) "The Role of Tacit and Explicit Knowledge in the Workplace", *Journal of Knowledge Management,* vol. 5, no. 4, pp.311 – 321.

Sun, H., Hui, K. I., Tam, Y.K.A. and Frick, J. (2000) "Employee involvement and quality management", *The TQM Magazine*, vol. 12, no. 5, pp. 350 – 354.

Teigland, R. and Wasko, M. M. (2003) "Integrating Knowledge through Information Trading: Examining the Relationship between Boundary Spanning Communication and Individual Performance", *Decision Sciences,* vol. 34, no. 2, pp. 261-286.

Terziovski, M. and Samson, D. (1999) "The Link Between Total Quality Management Practice and Organisational Performance", *International Journal of Quality & Reliability Management,* vol. 16, no. 3, pp. 226 – 237.

Thomas, K.W. and Velthouse, B.A. (1990) "Cognitive Elements of Empowerment: An "Interpretive" Model of Intrinsic Task Motivation", *The Academy of Management Review,* vol. 15, no. 4, pp. 666-681.

Toyota (1998), The Toyota Production System, Toyota Motor Corporation, Toyota City (Nagoya), Japan, p. 32.

Tushman, L. M. and Scanlan, J. T. (1981) "Boundary Spanning Individuals: Their Role in Information Transfer and Their Antecedent", *Academy of Management Journal,* vol. 24, no. 2, 289-305.

Tuckman, A. (1994) "The Yellow Brick Road: Total Quality Management and the Restructuring of Organizational Culture", *Organization Studies,* vol. 15, no. 5, pp. 727-751.

Ulrich, D., Jick, T. & Glinow, M.A.V. (1993) "High-impact learning: Building and diffusing learning capability", *Organizational Dynamics,* vol. 22, no. 2, pp. 52-66.

Ungan, M (2006) "Standardization Through Process Documentation"*, Business Process Management Journal*, vol. 12, no. 2, pp. 135 – 148.

Van De Ven, A. and Johanson, P. (2006) "Knowledge for Theory and Practise", *Academy of Management Review*, vol. 31, no. 4, pp. 802–821.

Vora, M.K. (2002)"Business Excellence Through Quality Management", *Total Quality Management,* vol. 13, no. 8, pp. 1151.

Wagner, A. J. (1994) "Participation's Effects on Performance and Satisfaction: A Reconsideration of Research Evidence", *The Academy of Management Review,* vol. 19, no. 2, pp. 312-330.

Zairi, M. (1997) "Business Process Management: a Boundaryless Approach to Modern Competitiveness", *Business Process Management Journal,* vol. 3, no. 1, pp. 64 – 80.

8 Appendix

Appendix A. A comparison between TQM, BE concepts and SKF Business Excellence. Adopted from Bou-Lousar et al. (2009)

Quality award models compared to TQM core concepts			
TQM core concepts	EFQM criteria (2003)	MBNQA criteria (2007)	SKF Business Excellence
Customer focus	5. Processes	3. Customer and market focus	4. Customer driven output
Visionary leadership	1. Leadership	1. Leadership	
Strategic planning	2. Policy and Strategy	2. Strategic planning	
Continuous improvements		4. Measurement, analysis and knowledge management	5. Continuous improvements
Process management	5. Processes	6. Process management	1. Standardised work
Employees	3. People	5. Workforce focus	2. Right by me
External cooperation/ benchmarking	4. Partnerships and resources		3. We care
Performance measurement		4. Measurement, analysis and knowledge management	5. Continuous improvements
	6. Customer results	7. Results	→ Methods and results
	7. People results		
	8. Society Results		
	9. Key performance results		

	Descriptive notes:	Reflective notes:
Type of observation: Time of observation: Date: Place: People attending:		
Process:		
Standardisation of tasks:		
Roles and responsibilities:		
Empowerment/involvement:		
Problem-solving:		
Knowledge exchange/communication:		
Other:		

Interview guide

Short description of the thesis

- Mapping of the business process from a "Finance" point of view (from receiving a customer enquiry to receiving the final payment)
- Focus on Business Excellence (processes and people)

1. Please describe your job
2. What would you say are the company's current strengths and weaknesses? How can the weaknesses be approached?
3. What goals are the business unit currently working towards?

Processes

4. Where does your responsibility in the business process start and end?
5. How does your work impact other functions in the business process? How do other departments in the business process affect your work?
6. To what extent are the tasks you carry out in your work documented?
   - Daily tasks
   - Changes to daily tasks
   - Role descriptions
7. Problems
   - What problems arise in your daily work?
   - How do you handle and/or solve problems when they arise?
   - Are there standard procedures for solving problems?

People

8. What motivates you to go the extra mile? (E.g. rewards, work tasks, people, feedback)
9. How would you describe the collaboration between different responsibility areas? (E.g. asking for assistance, knowledge sharing)
   - Within business lines/between functions
   - Within functions/between business lines
   - Production-back office
10. How do you ensure quality in your work?
   - Daily tasks
   - Problem solving
   - Together with other people
11. How do you follow up on own tasks that require other people's actions?
12. How do you go about changing existing procedures?

13. What would make it easier for you to do your job?
14. Is there anything you would like to add?
15. If there are any other questions, may we please contact you?

Appendix D. Flowchart illustrating the business process