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School of Business and Management  
Master's in Supply Management

MASTER'S THESIS

Success and Failure Factors in Implementation of Reengineered Sales and  
Procurement Planning Process

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## TIIVISTELMÄ

Tekijä: Sanna-Mari Hazanov  
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Tutkimuksen tavoitteena on tunnistaa onnistumiseen ja epäonnistumiseen johtavat tekijät uudelleensuunnitellun myynnin ja hankinnan suunnitteluprosessin käyttöönotossa sekä analysoida niiden vaikutusta. Tavoitteena on myös analysoida keskenkäisen prosessin käyttöönoton hyötyjä ja haittoja kun tarkoituksena on reagoida ulkoisiin paineisiin nopeasti. Tutkimuksen teoreettinen osuus keskittyy uudelleensuunnitellun liiketoimintaprosessin käyttöönottoon vaikuttaviin tekijöihin. Empiirinen osuus on toteutettu tapaustutkimuksena yritykselle, joka ottaa käyttöön uudelleensuunnitellun myynnin ja hankinnan suunnitteluprosessin, jonka IT järjestelmää vasta suunnitellaan käyttöönoton aikana.

Tutkimuksessa havaittiin 10 onnistumiseen ja 12 epäonnistumiseen johtavaa tekijää. Nämä tekijät voivat estää prosessin käyttöönoton, vaikuttaa sen oppimiseen, toteutukseen ja tavoitteiden saavuttamiseen. Keskenkäisen prosessin käyttöönotossa on sekä hyötyjä että haittoja. Työskentelytapojen muutos vie aikaa, mikä tukee muutoksen aloittamista mahdollisimman varhaisessa vaiheessa, mutta toisaalta useat muutokset IT järjestelmässä tai prosessissa vaativat ylimääräistä koulutusta, resursseja ja pidemmän aikavälin muutosjohtamista.

## **ABSTRACT**

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The objective of this research is to identify the success and failure factors in implementation of reengineered sales and procurement planning process and analyse how they influence the implementation. The aim is also to analyse the advantages and disadvantages of implementing incomplete process in order to react to external pressures faster. The theoretical part of the research focuses on factors influencing the implementation of reengineered business process. Empirical part is conducted as a case study for a company implementing reengineered sales and procurement planning process which is still incomplete as the supporting IT infrastructure is being developed during implementation.

In research 10 success factors and 12 failure factors were identified. These factors can prevent the implementation, influence how well the process is learnt, influence its execution and achieving the goals. Implementing incomplete process has both advantages and disadvantages. Changing the way of working takes time which supports starting the change as early as possible, but on the other hand several changes to IT infrastructure or process require additional training, resources and longer time frame change management.

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I will dedicate this thesis to my father, who knew 12 years ago that this day would come.

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## **KEY CONCEPTS**

The essential concepts related to this research are presented below:

Business process reengineering (BPR) means redesigning current business processes and their components in terms of effectiveness, efficiency and added value to the objectives of the business (Herzog et al., 2007). BPR requires fundamental rethinking and redesigning of processes in order to improve quality of service, decrease cost and increase speed. (Farughi et al., 2014).

Change management is about transforming an organisation from a present state to a desired future state. It relates to all measures, tasks and activities in an organisation that are necessary to initiate and execute changes in strategies, structures, systems, processes and behavioural patterns. The central concern of change management is to create readiness and willingness for change within the organisation. (Fritzenschaft, 2014)

# **1 INTRODUCTION**

## **1.1 Background of the Study**

Drastically changing business environment with increasing competition, expanding markets and differing needs of customers set challenges for both service and production companies in terms of processes, which often need to be enhanced in order to survive (Farughi et al., 2014). In complex business environment the basis of competition is no longer only cost and quality but also flexibility and responsiveness, which has increased the importance of delivering value through well designed processes (Sikdar and Payyazhi, 2014). According to Farughi et al., (2014) business process reengineering (BPR) is one of the modern approaches for improving organizational processes in order to gain sustainable competitive advantage.

The fundamental purpose of BPR is to serve customer better by reconfiguring work (Attaran, 2004). In reconfiguring work organization needs to identify both value-added activity and non-value-added clutter, and redesign the work in a way that it delivers value to customer as cost-effectively as possible (Attaran, 2000). BPR has potential to impact every aspect of how business is conducted and if managed successfully it can result in reductions in cost and cycle time, help in improving quality and most importantly customer service (Pezzotaite, 2012). However, even though significant improvements have been reported to be gained through BPR, majority of companies have not been successful in their efforts (Ranganathana and Dhaliwal, 2001). According to Bashein and Markus (1994) the failure rate in BPR can be as high as 70%. High failure rate in BPR reveals that it is not a trivial activity and the implementation plan of reengineered process needs to be checked against several success and failure factors to avoid pitfalls and ensure successful implementation. (Al Mashari and Zairi, 1999). In this research the focus is on identifying the factors which either enable success or cause failure in implementation of reengineered business process. In previous research on the success and failure factors influencing implementation of reengineered business process a unanimous conclusion has not been reached and therefore this research complements the results through a

case study. As external pressure caused by drastically changing business environment is a trigger leading to BPR (Farughi et al., 2014), the empirical part of the research is conducted from a viewpoint of implementing a reengineered business process as quickly as possible in order to react to external pressures fast, even though the supporting IT infrastructure is still in development phase. Therefore, the research also fills in a research gap by evaluating how incompleteness of the process influences its implementation and what are the advantages and disadvantages of implementing an incomplete business process in order to react to external pressures faster.

The research is conducted as a case study for a company operating in textile service industry in 24 countries. The focus is in evaluating the success and failure factors in implementation of reengineered sales and procurement planning process, which is incomplete during implementation as the supporting IT infrastructure is still being developed. The challenge of the company with current planning process is too short sighted prediction of future demand compared to required time of manufacturing process and delivery, which has increased stock, complicated efficient supply planning, slowed down first deliveries to new customers, impaired product availability to existing customers and prevented cost efficiency in operations. Due to multiple challenges caused by the current planning process, the aim is to implement the reengineered process as quickly as possible. Due to changing needs of customers leading to requirements for flexibility and responsiveness, it is expected that the company will need to develop its processes further. Therefore, the results of this research will provide guidance for implementing reengineered business processes in future.

## **1.2 Literature Review**

The concept of reengineering is originated from implementing Deming's principles in both business and industrial environments. Deming's principles are based on total quality management (TQM) philosophy, where evaluation of processes involving supply to customer is required in order to achieve maximum efficiency and customer satisfaction. Business process reengineering model was presented by Hammer and Champy in 1993 by defining it as "The fundamental rethinking and radical redesign

of business processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service, and speed" (Farughi et al., 2014). Even in the most recent literature majority of authors cite Hammer and Champy when defining business process reengineering, including Pezzottaite (2012), Tennant and Wu (2005) and Al-Mashari et al., (2001). Pezzottaite (2012) has expanded the definition by classifying BPR as a management approach aiming at improvements by elevating efficiency of the processes within and across organizations. Herzog et al. (2007) also consider BPR as a management discipline for redesigning current business processes and their components in terms of efficiency and added value to the objectives of the business.

Pezzottaite (2012) emphasizes that BPR does not mean only a change, but a dramatic change constituting overhaul of organizational structures, management systems, employee responsibilities and performance measures. Dennis et al. (2003) also state that the goal of BPR are large, dramatic improvements through radical changes, instead of incremental or marginal improvements. However, recent literature indicates that BPR would be evolving into a modest process management due to lessons learnt from success and failures in implementation. Therefore, the contemporary definition of BPR may include both radical and incremental improvements depending on the nature of the problem. (Ozcelik, 2010). Hammer (2002), Hammer (2004) and Silver (2004) have also published studies to explain and promote the new approach to BPR, which accepts also incremental improvements.

Several authors agree that BPR has been developed due to external factors influencing operations of companies. According to Al-Mashari et al. (2001) the increase in consumer requirements for both product and service efficiency and effectiveness has led to business process reengineering. Farughi et al. (2014) consider external factors influencing company's operations more thoroughly by indicating that organizations encounter serious challenges through drastically changing business environments, increasing competition, expanding markets and different needs of customers, which force both service and production companies to enhance the current processes in order to survive. BPR has been widely considered an efficient reaction to various pressures caused by external factors. Al-Mashari and Zairi (1999) state

that BPR has great potential to increase productivity by reducing process time and cost, improve quality and lead to greater customer satisfaction. Attaran (2000) agrees that companies, which have successfully implemented reengineering have benefit from improved quality and productivity, higher profits and overall better service to customers. According to Al-Mashari and Zairi (1999) succeeding however requires a fundamental organizational change and complex implementation process, which needs to be checked against several success and failure factors to avoid implementation pitfalls.

In literature reviewed both hard and soft factors influencing implementation of reengineered business process were identified. In research of Al-Mashari and Zairi (1999) the success and failure factors are categorized under change management, management competence, organizational structure, BPR project management and IT infrastructure. These same categories are identified by several authors (Zairi and Sinclair, 1995, Sikdar and Payyazhi, 2014, Attaran, 2004, Tzortzopoulos et al., 2005, Ranganathana and Dhaliwal, 2001, Tennant and Wu, 2005) and therefore they are focused on in this research. Researchers have differing opinions on which factors cause the high failure rates in implementation of reengineered business process. The importance of each factor also varies depending on the source, in academic journals which focus on IT, IT infrastructure factors are considered the most significant (Bashein and Markus, 1994, Borgianni et al., 2015, Lindsay et al., 2003) whereas articles in management journals emphasize the importance of soft factors related to change management (Armenakis and Harris, 2002, Attaran, 2000, Sikdar and Payyazhi, 2014). Findings of research of Grover et al. (1995) imply that implementing reengineered process is a complex project involving a combination of factors which all influence the success or failure of implementation. Tennant and Wu (2005) agree that all these elements and factors should be considered together, as it is not possible to succeed in implementation by modifying just one of the factors without considering its influence on the others and overall result of BPR. Completely unanimous results of the success and failure factors was not identified in literature reviewed and therefore this research complements the previous researches with its results. Another research gap identified during literature review is limited amount of

research conducted on influences of incompleteness of the process on its implementation. The empirical part of the research is conducted from a viewpoint of implementing a process which is not completely designed as its supporting IT infrastructure is not developed yet. Therefore, a research gap is filled by providing an analysis on how incompleteness of the process influences on the implementation and what are the advantages and disadvantages of implementing incomplete process in order to react to external pressures faster.

### **1.3 Objectives and Research Questions**

The theoretical objective of this research is to identify the success and failure factors in implementation of reengineered business process and analyse how they influence the implementation. Literature on business process reengineering is reviewed with focus on implementation phase and more precisely on the success and failure factors influencing implementation, in order to form a theoretic framework for the research. In order to fill in a research gap the research is conducted from a point of view of implementing an incomplete business process to analyse its influence on the implementation.

The research objective of this thesis is to identify the success and failure factors in implementation of reengineered sales and procurement planning process in the case company. The aim is to find out how success and failure factors influence the implementation. The purpose is also to analyse the advantages and disadvantages of implementing an incomplete process in order to react to external pressures faster, as in case company the process is implemented while the supporting IT infrastructure is still being developed.

The main research question of this study is: “What are the success and failure factors in implementation of reengineered sales and procurement planning process?” In order to provide more specific information and fill in a research gap by conducting the research from viewpoint of implementing incomplete business process, the following sub questions are created:

-How do success and failure factors influence implementation of reengineered sales and procurement planning process?

-What are the advantages and disadvantages of implementing an incomplete sales and procurement planning process in order to react to external pressures faster?

## **1.4 Research Methods**

This is an explanatory research aiming at identifying success and failure factors influencing implementation of reengineered business process and finding out how incompleteness of the process influences its implementation. The goal is also to evaluate the advantages and disadvantages of implementing an incomplete business process to react to external pressures faster.

The research consists of theoretical and empirical part and is deductive in nature, as it begins with forming a theoretical framework as a base for hypothesis, which are then tested in empirical part. In theoretical part of the research literature on business process reengineering is reviewed with the focus on implementation phase and more precisely on success and failure factors influencing the implementation in order to form a theoretic framework for the research and base for hypothesis.

The empirical part of the research is a case study consisting of both qualitative and quantitative research methods. It begins with familiarizing with the case company and implementation plan of the reengineered business process through in depth interview of the project manager. Data on implementation of the reengineered business process from business units' point of view is collected through a questionnaire. The aim is to test respondents' knowledge on the process in theory through an exam, collect background information on factors related to implementation to be compared with exam score and development of forecast accuracy, and provide respondents possibility to give open feedback. After that data on development of forecast accuracy is collected by interviewing the demand planner in order to evaluate whether one of the goals, improvement of forecast accuracy is reached through reengineered process and test which factors have influenced its development.

The qualitative data, including data gained through interview of the project manager and open-ended questions in questionnaire, is analysed by categorizing data, which means grouping chunks of data based on the themes arising from questionnaire and interview (Saunders, 2009, 492). Quantitative data, including data gained through quantitative questions in the questionnaire and development of forecast accuracy, is analysed through statistical analysis. Linear regression is used in assessing the strength of relationship between certain variables in questionnaire and score of theoretical exam, which aims at measuring how well the process is known in theory, in order to know which factors influence how well the process is learnt. Linear regression is also used in analysing which factors influence the development of forecast accuracy, which is one of the quantifiable goals of reengineering the sales and procurement planning process. (Saunders, 2009, 461)

## **1.5 Structure of the Research and Theoretical Framework**

Figure 1. Illustrates the structure of the thesis. The thesis begins with an introductory chapter, which introduces the content of the research to the reader. First the background of the study is introduced which are followed by the literature review. After that the objectives of the study and research questions are presented, which is followed by a short description of the methodology. After that, the theoretic framework of the research is presented and limitations of the research described.

After introductory chapter a theoretic part of the research follows. The theoretic part of the research begins with introducing business process reengineering in general. After that the focus is more specifically on the success and failure factors in implementation phase of reengineered business process where the success and failure factors identified in previous researches are presented.

After theory part the methodology of the research is introduced, which is followed by the empirical part of the research presenting the case study. After introducing the case study the findings and results of the research are presented, which is followed

by analysis, where the results are analysed more thoroughly. After analysis the thesis is finalized with conclusion.



Figure 1 Structure of the thesis

The theoretical analysis begins with introducing business process reengineering in general. The first section describes the background of business process reengineering, its triggers, goals and potential results. The second section presents a generic model of BPR by Vakola et al. (2000a), which is a process of eight successive steps derived by assessing the best practices in literature. The generic model of BPR gives an overall picture of the steps required to conduct BPR, but in this research the focus of theoretic framework is in the fifth step, implementation, as illustrated in figure 2.

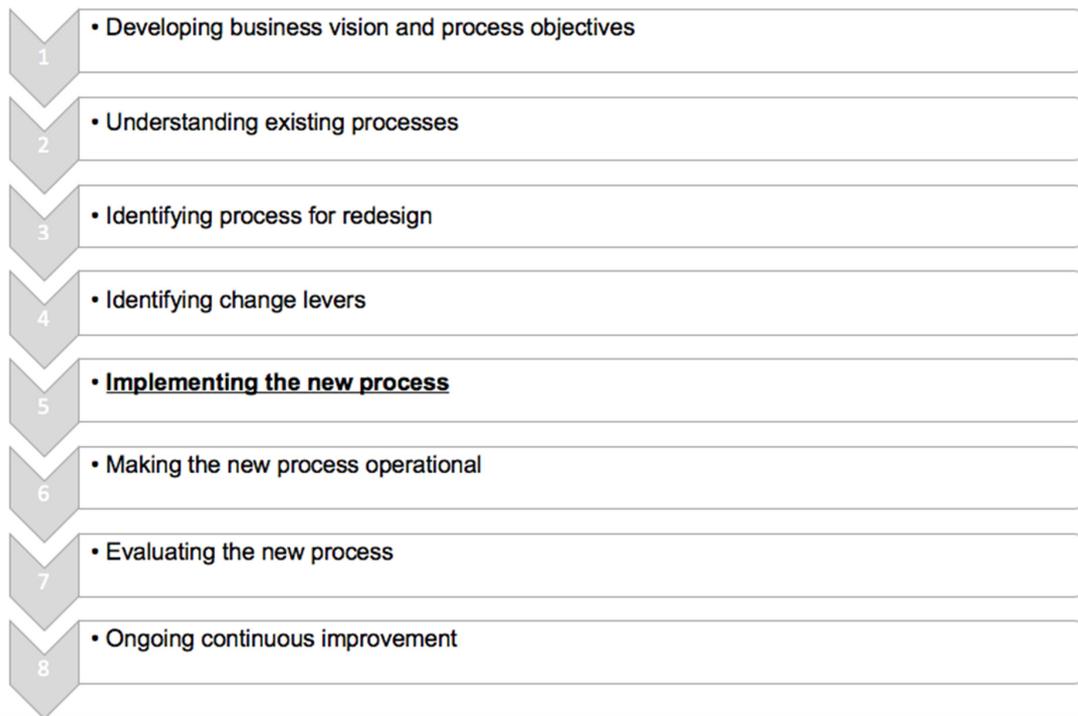


Figure 2 Generic model of BPR (Vakola et al. 2000a)

The theoretic framework of this research focuses on the implementation of reengineered business process and more specifically on the success and failure factors influencing the implementation of reengineered business process. The theoretic framework of this research is based on research of Al-Mashari and Zairi (1999), Zairi and Sinclair (1995), Sikdar and Payyazhi (2014), Attaran (2004), Tzortzopoulos et al., (2005), Ranganathana and Dhaliwal, (2001) and Tennant and Wu, (2005) who identify five categories of factors which influence the implementation of reengineered business process; factors related to change management, factors related to organizational structure, factors related to management competence, factors related to BPR project management and factors related to IT infrastructure. Each of these categories contain more specifically defined factors influencing the implementation of reengineered business process, as illustrated in figure 3.

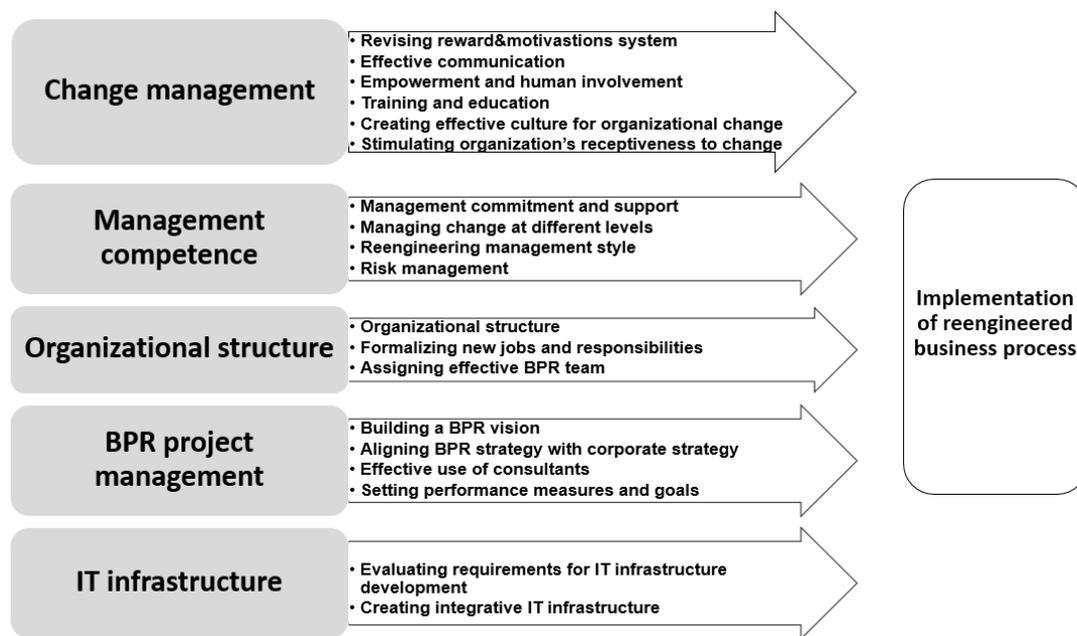


Figure 3 Theoretic framework

## 1.6 Limitations

This research has a variety of limitations due to narrow focus on selected areas of the topic and limited time frame set for the research. In theory part the focus of the research is in the implementation phase of business process reengineering and therefore earlier phases, such as redesigning the process, and following phases, such as managing the process after implementation, are excluded from the study. The theory part consists of the most important success and failure factors in implementing the reengineered business process based on the literature review conducted and therefore all success and failure factors are not included and evaluated in this research.

The empirical part of the research is conducted as a case study for one company only and therefore the results might not be applicable for all companies due to limited scope. As the IT infrastructure is still in development phase during the research and final costs of BPR are therefore unknown, financial aspect is excluded from the analysis of implementation.

As the time frame of the research is limited and data on development of forecast accuracy is gathered only on the first month when results of the reengineered process can be seen, the research excludes the analysis of long term development of the performance after the reengineered process is implemented. This includes for instance development of forecast accuracy, product availability to customers, speed of first deliveries to new customers and improvement of customer satisfaction. In general, the time frame in which the forecast accuracy is observed is relatively short due to lack of data available which may decrease the reliability results. Additionally, the data on forecast accuracy of business units in Finland is not available in case company as they have not been reported on business unit level. Therefore, the results related to development of forecast accuracy in Finnish market are excluded from the research.

## **2 BUSINESS PROCESS REENGINEERING**

Business process reengineering (BPR) is presented in the following chapters by providing general information on its background and triggers, its definition, potential results and three keywords related to BPR. A generic model of BPR is introduced to describe the steps included in the process and finally the focus turns into the theoretic framework of the research, success and failure factors in implementation of reengineered business process.

### **2.1 Triggers for BPR**

Drastically changing business environment with increasing competition, expanding markets and differing needs of customers set challenges for both service and production companies in terms of processes, which often need to be enhanced in order to survive (Farughi et al., 2014). In complex business environment the basis of competition has shifted from cost and quality to flexibility and responsiveness, which has increased the importance of delivering value through well designed processes (Sikdar and Payyazhi, 2014). According to Farughi et al., (2014) business process reengineering (BPR) is one of the modern approaches for improving organizational processes in order to gain sustainable competitive advantage. Al Mashari et al., (2001)

state that increase in customer requirements for efficiency and effectiveness has influenced the need to redesign business processes and therefore lead to BPR. In highly competitive markets companies face the challenge of continuously improving their offer on products and services to fulfil the growing expectations of customers. On one hand companies are asked for enhanced quality and fast adoption to changing needs, but on the other hand they should be able to curb the costs. Therefore, the importance of strategically redesigning processes to achieve significantly higher performance has lead to BPR. (Borgianni et al., 2015).

## **2.2 Definition of BPR**

Business process reengineering (BPR) can be defined as a management discipline for redesigning current business processes and their components in terms of effectiveness, efficiency and added value to the objectives of the business (Herzog et al., 2007). BPR means fundamental rethinking and redesigning of processes in order to improve quality of service, decrease cost and increase speed. (Farughi et al., 2014). According to Attaran (2004) target of reengineering should be core business process of an organization and it should rather focus on redesigning the process from a scratch than analyzing and modifying the current one. The fundamental purpose of BPR is to serve customer better by reconfiguring work (Attaran, 2004). In reconfiguring work organization need to identify both value-added activity and non-value-added clutter, and redesign the work in a way that it delivers value to customer as cost-effectively as possible (Attaran, 2000). The desired development in the function of the organization can be achieved through changes in different organizational dimensions, such as strategies, organizational systems, human resources and IT infrastructure (Farughi et al., 2014). Attaran (2004) states that BPR forces organizations challenge the way they think and are run, and redesign the whole organization around the desired outcomes rather than departments.

## **2.3 Benefits of BPR**

BPR has potential to impact every aspect of how business is conducted. If BPR is managed successfully it can result in reductions in cost and cycle time, help in improving quality and most importantly customer service (Pezzotaite, 2012). In their research Tzortzopoulos et al., (2005) have divided the benefits gained from BPR into three categories; benefits for organization, benefits for the process and benefits for the customer. The most important organizational benefit is achieving consistency and integration throughout the organization. Through replication of the process and its activities the possibility of achieving more predictable outcomes increases. (Winch and Carr, 2001). In addition to consistency, BPR aims at increasing competitiveness of the organization through improved processes (Tzortzopoulos et al., 2005). Benefits of BPR to the process are simultaneously benefits to the organization. BPR aims at better planning of the process, so that time and costs would be saved. BPR also forces organization to improve communication, which leads to better and timely information exchanges. Due to better planning of the process also reduction in errors is expected. For customers the most significant benefit of BPR relates to having better value for money. This can be achieved through a product or service that fits the purpose, has reasonable costs compared to quality and is delivered on time. (Tzortzopoulos, 2005). According to Ozcelik (2010) all the benefits gained from BPR are visible in performance of the organization only after BPR implementation has been finalized, whereas during the execution it remains unaffected.

Even though significant improvements have been reported to be gained through BPR, majority of companies have not been successful in their efforts (Ranganathana and Dhaliwal, 2001). According to Bashein and Markus (1994) the failure rate in BPR can be as high as 70%. High failure rate in BPR reveal that it is not a trivial activity. According to Attaran (2000) BPR should be undertaken only if organization has strong motivation to change and it has clear business case behind the BPR.

## **2.4 Three Keywords of BPR**

According to literature BPR has three keywords. The first key is that organizations should look at their business process to be reengineered from a “clean slate” perspective in order to determine how to construct the process in order to improve the way they conduct business (Pezzottaite, 2012). Re-engineering should start without any assumptions, so that organization can effectively determine its needs and define how the needs can be met in the most effective way (Ringim et al., 2013). According to Hammer (1990) the best way for organization to start from a scratch is to ignore the current processes and not to focus on analyzing them, but rather identify the future goals and construct the process accordingly. The second keyword to reengineering, radical redesign, relates to the first keyword. It means abandoning existing process and creating completely new one instead of modifying the current one. (Ringim et al., 2013). The third keyword has evolved slightly throughout the years due to increased experience in BPR and its influence of company’s performance. In early years radical instead of marginal or incremental improvements and change were identified as the third keyword (Hammer, 1990). Dramatic improvement involved achieving greater performance (Ringim et al., 2013) by changing the organizational structures, management systems, employee responsibilities, performance measures and IT infrastructure based on the reengineered process (Pezzottaite, 2012). However, more recent literature suggests that lessons learnt from success and failure factors in implementation of BPR has modified the contemporary definition to include both radical and incremental improvements, depending on the nature of the problem. (Ozcelik, 2010)

## **2.5 Generic Model for BPR**

There are several different BPR approaches and methodologies available, but many of them have very similar key areas focusing on vision, planning and implementation. A generic model for BPR by Vakola et al. (2000a) is chosen to be demonstrated in chapters below as most methodologies are quite static and stop at the implementation phase, whereas the generic model for BPR by Vakola et al. (2000a) considers BPR as continuous improvement by adding three more steps after implementation,

which is consistent with the thought of increasing pressures of an ever-changing world and constant need to develop processes.

A generic model of BPR by Vakola et al. (2000a) is derived by assessing the best practices in literature. The model presents BPR as eight successive steps forming a process as illustrated in figure 2.

The first step is developing business vision and process objectives, which are determined by the business strategy. Developing business vision and process objectives relies on understanding the organizational strengths, weaknesses and market structure, but also acknowledging innovative activities undertaken by competitors. External forces, such as customer needs, competitor actions, technological and environmental factors often create external threat or market pressure, which lead to need for radical change and revision of the business vision. (Vakola et al., 2000a).

The second step is understanding existing processes, which means recognising the the problems in existing processes in order to ensure that they are not repeated in the new one. (Vakola et al., 2000a). The third step is identifying process for redesign, which means recognizing which processes need to be redesigned in order to support company's objectives (Vakola et al., 2000b). The fourth step is identifying change levers, which means recognizing how IT infrastructure, organizational structure and human resource approaches can be applied to support the reengineering. The fifth step is implementing the reengineered business process, which is the step this research is focused on. Implementation is a critical phase as reengineered processes are often only partially implemented or only partially used on operational level if pitfalls are not avoided. (Vakola et al., 2000a).

Most BPR models are limited to implementation, but in this generic model three more steps are identified after implementation. The sixth step after implementation is making the new process operational, which aims at setting up all systems to support the reengineered process and observing how it functions and operates. The seventh step is evaluating the new process; its usability, effectiveness and if it enables achieving goals. Eighth step is ongoing continuous improvement. Even though

reengineered process may reach a satisfactory state and efficiency, the business environment will change continuously leading to transformations in business strategy and need to improve organizational processes and functions even further. (Vakola et al., 2000a). Due to limited time frame, the three last steps are not included in this research.

### **3 SUCCESS AND FAILURE FACTORS IN IMPLEMENTATION OF REENGINEERED BUSINESS PROCESS**

As noted earlier, BPR has potential to increase productivity through improved quality and greater customer satisfaction, but it requires fundamental organizational change, which makes the implementation process complex. The implementation plan of reengineered process needs to be checked against several success and failure factors to avoid pitfalls and ensure successful implementation. (Al Mashari and Zairi, 1999). There are several researches conducted on failure rates of implementing BPR and factors influencing it. For instance, Bashein and Markus (1994) state that up to 70% of companies initiating BPR have failed in their efforts and Grover et al. (1995) identified 64 success/failure factors related to implementation of BPR. In this research the number of factors discussed is more limited and focus is on factors, which are most commonly identified in literature reviewed. These hard and soft factors represent various dimensions of change related to implementation of BPR and can be divided into five categories; factors related to change management, management competence, organizational structure, BPR project management and IT infrastructure. These categories were chosen to be included in the research as they were identified by several researchers, such as Al-Mashari and Zairi (1999), Zairi and Sinclair (1995), Sikdar and Payyazhi (2014), Attaran (2004), Tzortzopoulos et al., (2005), Ranganathana and Dhaliwal, (2001) and Tennant and Wu, (2005)

Researchers have differing opinions on which factors cause the high failure rates of BPR implementation, but findings of research of Grover et al. (1995) imply that implementing re-engineered process is a complex project involving a combination of factors which all influence the success or failure of implementation. Grover et al.,

(1995) state that it is essential for success that the change is managed by paying balanced attention to all influencing factors, including those that are more contextual, such as technological competence and those, which influence directly conducting the project, such as project management skills. Tennant and Wu (2005) agree that all these elements and factors should be considered together, as it is not possible to succeed in implementation by modifying just one of the factors without considering its influence on the others and overall result of BPR implementation.

### **3.1 Factors Related to Change Management**

Change management is considered a crucial component of BPR as it relates to all human- and social-related changes and cultural adjustment techniques, which management can use to facilitate implementation of reengineered processes within the organization (Zairi and Sinclair, 1995). Grover et al. (1995) state that the results of their research clearly indicate the central importance of change management in succeeding in implementation of reengineered business process as other factors, such as technological competence or process planning are not sufficient to guarantee success in implementation, even though they are considered important for the overall result of BPR. Additionally, problems related to factors which are directly linked to conducting the project, such as project management and planning, are perceived less difficult to solve than problems related to change management and people (Grover et al., 1995). According to Al-Mashari et al., (2001) change management is positively linked with BPR success, but organizational experience in integrating them is still in its infancy. Attaran (2004) states that many companies who attempt BPR put all their efforts into redesigning the process, but either ignore or underestimate the importance of people in implementation. According to research of Sikdar and Payyazhi (2014) managing the organizational change is the most demanding task in BPR as the changes impact the human aspect of management and relationships amongst individuals involved in the process. If the management does not consider the organizational change and employees involved with the new process, the implementation is guaranteed to fail (Attaran, 2004).

BPR changes all aspects of business and causes significant changes throughout the organization, which is likely to cause anxiety among employees. Resistance to change, worries about job security, lack of optimism and skepticism about the results of BPR can cause failure in implementation of a reengineered process (Jackson, 1997, Bashein and Markus, 1994). One of the challenges in implementing a reengineered process is coping with the reaction of employees as they might resist the change and fear losing their jobs. (Attaran, 2004). According to Beer and Nohria, (2000) one of the reasons for high failure rate of transformational changes like BPR are ambiguity and uncertainty within the organization, which are caused by high-intensity changes to existing systems and processes. Based on research of Tzortzopoulos et al. (2005) even in BPR literature it is often neglected that organizations consist of individuals and groups of employees having differing values, needs and goals, which may lead to conflicts within the organization. Lindsay et al., (2003) also state that in BPR literature people are assumed to be rational decision makers, who co-operate together to achieve agreed and clearly defined goals. However, according to Tzortzopoulos et al. (2005) different groups of people will have varying views on the reengineered process and its implementation, and therefore conflicting actions between those groups are likely to occur. In order to allow the adoption of the reengineered process employees need to be motivated and capable to change their behaviour as the change needs to happen at all levels; individual, group and organizational levels. (Tzortzopoulos et al., 2005)

According to Lindsay et al., (2003) BPR is often derived from traditional techniques of scientific management, which makes it very mechanistic in nature and even though efforts have been made to soften the techniques by adding teamwork for instance, it still often fails to consider the complexity of work needed in the organization. Al-Mashari et al., (2001) state that lack of tools and techniques that provide assistance and guidance in change management might be one of the reasons why organizations are still not competent in integration of BPR, therefore change management should become priorities for organizations wanting to establish a new process. Based on research of Al-Mashari and Zairi (1999) revision of reward systems, communication, empowerment, people involvement, training and education, creating culture for change and stimulating receptivity of the organization to change are

the factors of change management which should be considered in the organization when implementing a new process and they are discussed in the following chapters.

### **3.1.1 Revising Reward and Motivation Systems**

In order to facilitate reengineering efforts and implementation of the reengineered process employees should be motivated to adopt to changes. (Al-Mashari and Zairi, 1999). According to Tzortzopoulos et al. (2005) employees may lack motivation as the implementation of a new process disrupts operations and working practices, and often leads to retraining of employees. Grover et al., (1995) states that lack of motivation and reward is one of the failure factors in implementation of BPR. Tzortzopoulos et al. (2005) agree by mentioning in their research that lack of motivation may lead to passivity, hidden sabotage or rejection of implementation. A new, fair and encouraging reward programme may be established to motivate employees to adopt to changes as the existing one might not suit the new process and its job descriptions (Al-Mashari and Zairi, 1999). According to Sikdar and Payyazhi (2014) a new reward system may help to sustain the effectiveness of newly reengineered roles and responsibilities of employees.

### **3.1.2 Effective Communication**

Effective communication is considered crucial for successful implementation of reengineered business process (Terziovski, 2003) as it necessitates sharing information among different departments and business units within the organization (Attaran, 2000). According to Ranganathana and Dhaliwal (2001) communication between the BPR team and employees and interdepartmental cooperation are critical success factors as they facilitate developing understanding on how the reengineered business process is aligned with other systems within the organization. Grover et al., (1995) agree by stating that poor communication between the BPR team and other employees within the organization may become a failure factor in implementation of a new process. Communication should be managed throughout the change process for all audiences, even with those who are not directly involved

with the reengineering project (Dixon et al., 1994). Stakeholders outside the organization may also be communicated on the BPR in order to market the future changes within the organization and also ensure understanding and patience on possible unexpected issues caused by the changes (Hinterhuber, 1995).

Communication breaks the barriers between the ones in charge of the change initiatives and those who are impacted by them (Sikdar and Payyazhi, 2014). According to Jackson (1997) communication should take place frequently and in both directions between the ones who initiate the change and the ones who it influences. The ease of communication and collaboration between the process owner and users affect the implementation, as problems with transferring tacit knowledge may arise during implementation if there are barriers to interpersonal communication (Tzortzopoulos et al., 2005). Attaran (2000) states that organization should create an effective and comprehensive communication plan, which includes feedback loops for employees to bring up their concerns during the implementation. Based on research or A-Mashari and Zairi, (1999) effective communication should be open, honest and clear, especially when discussing sensitive issues related to employees, such as changes in responsibilities or even personnel reductions. According to Jackson (1997) one of the failure factors in implementing a new process is hiding the uncertainties in communication.

Based on research of Sikdar and Payyazhi (2014) different ways of communication may be used to address emotional and cognitive sides of employees who are influenced by BPR to improve their readiness for change. Communication techniques may include direct, honest verbal communication with recipients or more marketing-oriented communication with the intention to persuade recipients to change. Communication can also be neutral proactive sharing of information with key stakeholders or more engaging consensus-building through discussion and problem solving. Communication technique may be chosen based on the stage of the change process and information requirements of the change recipients. (Armenakis and Harris, 2002)

### **3.1.3 Empowerment and Human Involvement**

Empowerment is a critical factor for successful BPR efforts as it encourages employees at all levels to be more responsible and accountable during the implementation of the reengineered process (Hinterhuber, 1995). Empowerment enables employees to set their own goals and monitor their performance, identify and solve problems related to their work and therefore also support BPR efforts (Al-Mashari and Zairi, 1999). According to Bashein and Markus (1994), empowerment indicates that employees are given chance to participate in the BPR process. Based on research of Sikdar and Payyazhi (2014) empowerment promotes self-management and co-operation between employees, which makes it an effective success factor in implementation of reengineered business process.

According to Jackson (1997) employees at different positions in the organization should be openly and actively involved and consulted during BPR. Based on research of Al-Mashari and Zairi (1999) people, such as process owners, managers, HR and workers involved or affected by BPR should also be prepared for errors and mistakes during re-engineering, as they are significant part of experimentation culture.

### **3.1.4 Training and Education**

According to Zairi and Sinclair (1995) training and education is important success factor in implementation of BPR. Grover et al., (1995) agree that lack of appropriate training of people influenced by BPR may become serious failure factor during implementation of the process. Based on research of Tzortzopoulos et al. (2005) it can be stated that lack of training and education during changes may lead to scepticism towards the reengineered process and complicate the acceptance of new responsibilities and changes in job description. Attaran (2000) agrees that BPR changes jobs and responsibilities within the organization causing employees at all levels to acquire new skills, such as problem solving, communication, teamwork and customer orientation. Based on research of Al-Mashari and Zairi (1999) also skills related to

BPR concept, IT, process analysis techniques and leadership of empowered organizations are important dimensions of training during BPR. According to Attaran (2000) training in all these critical areas is important for the reengineering to succeed and organizations should provide support and assign sufficient resources for training and education of employees and managers. Based on research of Al-Mashari and Zairi (1999) organizations might have to increase their training budget up to 30-50% during BPR, which gives perspective on how important training is considered to be. The training program should be evaluated and assessed in order to assure the focus on topics to be learnt. Additionally, the training should rather be an ongoing process instead of a one-time training session to guarantee continuous improvement. (Attaran, 2000)

### **3.1.5 Creating Effective Culture for Organizational Change**

According to Zairi and Sinclair (1995) organizational culture is an important factor influencing the success of implementing reengineered business process as it impacts organization's ability to adapt to change. Tennant and Wu (2005) agree that if the culture within the organization is not ready for BPR it may cause problems in implementing reengineered processes. Burke and Litwin (1992) propose that transformational changes, which are caused by extreme or unexpected pressure from external environment, require creation of new configurations, which can be achieved if the fundamental elements of the organization, such as organizational culture defined by deep-rooted values, can be changed. Based on research of Al-Mashari and Zairi (1999) the existing culture often consists of beliefs and values, which are no longer appropriate or valid in re-engineered environment, so the organization should adopt to the new values, management processes and communication styles. According to Segatto et al., (2013) one of the key barriers in transforming organizations from a silo-based functional culture to a process based culture is failure to align new organizational culture and people.

Based on research of Sikdar and Payyazhi (2014) especially if the strategic goal of the organization is service excellence, organizational culture should be in line with the strategic direction and processes so that all actions are integrated with each

other and therefore reinforce the message of service excellence even within the organization. The existing culture may be compared with the reengineered processes and strategy, and gaps resolved either through short term, intermediate or long term change interventions, depending on the degree of discrepancy between desired culture and existing one (Sikdar and Payyazhi, 2014).

### **3.1.6 Stimulating Organization's Receptiveness to Change**

Preparing organization for the changes caused by BPR may facilitate positive response and critically influence the success of implementing reengineered business process, as people often remain focused, flexible, organized, pro-active and positive during uncertainty if they are made resilient to change (Jackson, 1997). BPR inevitably causes significant changes within the organization and therefore has tendency to cause organizational anxiety. It has proven to be challenging to get people to buy into reengineering and resistance and cynicism are inevitable when reengineering team starts to identify problems in current processes and suggest radical ideas for solutions. Employees are often afraid of job displacement and radical changes within the organization and therefore resist reengineering. (Attaran, 2000).

According to researchers there are ways in which resistance to change can be minimized by preparing the organization for upcoming changes. Based on research of Sikdar and Payyazhi (2014) the external and internal triggers for change should be identified and awareness within the organization created on the need for change already before introducing any solutions for problems. According to Armenakis and Harris (2002) stakeholders should be provided with evidence on discrepancy between existing state and desired state in order to create change readiness. After that key stakeholders should be engaged in the process of converting the need to change into desire to change through appropriate planning, allocating resources and creating a change process. (Sikdar and Payyazhi, 2014). Armenakis and Harris (2002) state that change must be perceived as appropriate, which can be achieved by engaging key stakeholders in problem solving as it enhances their sense of control over the outcome. Attaran (2000) agrees that making stakeholders feel they are part of the reengineering process may improve their moral and soothe negativity

towards the changes. According to Fugate et al. (2012), fairness and interaction in decision making can reduce the perceptions of threat among stakeholders during periods of change and therefore decrease resistance. Armenakis and Harris (2002) state that readiness for change can be strengthened by perceptions of managerial support from senior management in form of information and resources. According to Kotter (1995) leaders play crucial role in creating and communicating vision, empowering change recipients and creating facilitating organizational systems to enable easier adoption to changes.

Leveraging organizational change within and outside organization requires multiple effective interactions with key stakeholders (Al-Mashari and Zairi, 1999). Beer and Nohria (2000) agree that bringing about changes in deep-rooted assumptions to facilitate transformational changes requires various organizational socialization strategies. Even though managing resistance to change requires resources and time during implementation of BPR, its significance should not be overlooked, as Grover et al. (1995) consider lack of adequate planning for resistance to change and not realizing the need for change management as major failure factors in implementing BPR.

### **3.2 Factors Related to Management Competence**

Management processes influence how effectively reengineered process is implemented within the organization (Bashein and Markus, 1994). Based on research of Tennant and Wu (2005), the most important task for managers in BPR is to lead the strategy to improve organizational performance. Management should prioritize business processes for BPR based on company's strategic goals and establish clear targets and measures for the BPR team to follow. The emphasis should be on continuous improvement in a long run, rather than quick help in a short run. Management should understand the needs of employees rather than focus on downsizing, enable developing better communication channels and improve co-ordination of people and technologies. (Tennant and Wu, 2005).

Several authors emphasize the importance of management commitment and support (Al-Mashari and Zairi, (1999), Jackson, (1997), Attaran, (2000), Dennis et al., (2003), Dixon et al., (1994), Grover et al, (1995), and effective management of risks (Al-Mashari and Zairi, (1999), Attaran, (2004), whereas Attaran (2000) and Grover et al., (1995) emphasize the importance of reengineering management style alongside the process. Sitkar and Payyazhi (2014) divide the managerial roles into three levels of management and emphasize that all managerial levels have their own responsibilities in implementation of reengineered business process. In following chapters management commitment and support, managing change at different levels, reengineering management style and managing risks are discussed more thoroughly.

### **3.2.1 Management Commitment and Support**

Jackson (1997) states that commitment and leadership of management can be considered the most important factor of successful implementation of BPR as clear vision of organization's future needs to be provided through effective, strong and visible leadership. Dixon et al. (1994) agrees by stating that strong commitment to and support for the change must be secured from management throughout the BPR. Grover et al. (1995) agree that top-management commitment and favourable managerial attitude towards change are essential for successful implementation of reengineered business process. According to Attaran (2000) implementing a change as significant as BPR may become problematic without absolute commitment of management on the necessary time, financial investment and other resources. According to Grover et al., (1995) there are several problems related to management commitment which may cause failure in implementation of reengineered business process, such as lack of sustained management commitment, leadership and support throughout the BPR project. Attaran (2004) agrees that lack of leadership is often a major factor causing high failure rates in BPR projects as efficient implementation requires a top-down directive leadership style. Dennis et al. (2003) point out that it is also vital for top management to involve the middle managers who are responsible for implementation of reengineered process in order to commit them to changes in the organization. Securing communication channels is important in order to ensure

clear communication of the vision to wide range of employees to involve and motivate them rather than directly guide them for the vision of the company. (Al-Mashari and Zairi, 1999).

### **3.2.2 Managing Change at Different Levels**

Based on research of Sitkar and Payyazhi (2014) the responsibilities in BPR can be divided between three management levels; enterprise level managers, process/departmental level managers and activity level managers. The primary role of enterprise level managers is to obtain the alignment of strategy, shared values and resources. Enterprise level managers understand the organizational goals and therefore their key role is to identify the value chain which would serve the strategic objectives. Process/departmental level managers manage the technical process of BPR as they detail the value chain by designing workflows and interactions both inter and intra department. They support organization's goals by aligning existing intra- and inter-departmental relationships to forge new structural relationships. Activity level managers' role is to detail and operationalize the rules, roles and methods involved in each task of the workflow. Activity level managers play key role in managing change and seeking alignment of staff. To facilitate the effective execution, activity level managers may identify and train staff who can bridge the gap between the old and the new process for those who are less motivated or able to learn the new process. (Sitkar and Payyazhi, 2014).

### **3.2.3 Reengineering Management Style**

BPR may change all aspects of business, not just jobs and skill requirements of employees, which forces changes in management style as well. Managers need to reevaluate what they do, who they are, what they know and how they think to shift the orientation of management (Attaran, 2000). According to Grover et al., (1995) inability to change management style according to reengineered process may cause problems in implementation of reengineered business process. Attaran (2004) agrees that a fundamental source for difficulties is that process is reengineered while management style is not. Management needs to learn to organize work in a

holistic, integrated ways and create environment where preoccupation with internal activities are replaced with a design focused on customers. (Attaran, 2004).

### **3.2.4 Risk Management**

As implementation of reengineered business process leads to radical changes within the organization risks associated with the acceptance of changes, deploying new IT systems with little familiarity and investing in new resources needed for reengineered processes may emerge. Therefore, anticipating and planning for risk handling and continuous risk assessment is required throughout the implementation process in order to ensure the success of reengineering efforts. (Al-Mashari and Zairi, 1999). According to Attaran (2004), evidence suggests that reengineering always presents problems which are not anticipated, requires more human resources than expected and takes longer than estimated, so in addition to risk assessment the objectives and targets of BPR should be realistic.

## **3.3 Factors Related to Organizational Structure**

Reengineering processes influences jobs and responsibilities within the organization. A need to create new organizational structure often emerges in order to determine how human resources are integrated, how new jobs and responsibilities are formalized and also how BPR teams are constructed. (Al-Mashari and Zairi, 1999).

### **3.3.1 Organizational Structure**

According to Sikdar and Payyazhi (2014) there is a need to develop understanding how the reengineered business process is aligned with the overall organizational structure due to changes in relationships, workflows and tasks. Grover et al. (1995) agree by stating that integrating organizational structure with the reengineered process promotes adoption to radical changes. According to Attaran (2000) companies often struggle with implementation of BPR if the process itself is re-engineered, but the organizational structure is not. In existing structures individuals often work in isolated departments whereas in process-based organization departments should be replaced with cross-functional teams. The new organizational infrastructure must

be altered to facilitate cooperation and communication between departments and eliminate cross-functional barriers (Attaran, 2000). Grover et al., (1995) state that inflexible hierarchical structures may become a failure factor in implementing BPR and Ranganathana and Dhaliwal. (2001) point out that organizations are often rigid and therefore complicate to reengineer alongside processes. According to Jackson (1997) inflexibility may be challenging to change as people tend to think solely their own immediate working group instead of a whole process.

### **3.3.2 Formalizing new Jobs and Responsibilities**

Considering a process-based organizational structure focusing on jobs and labour integration is important (hammer, 1990), as processing time, cost and quality can be improved only if individuals perform series of tasks within the process efficiently. As new jobs and responsibilities are resulted from BPR, in order to succeed in implementation and encourage employees to perform the tasks efficiently a formal and clear job descriptions of all jobs and responsibilities need to be created. (Al-Mashari and Zairi, 1999). According to Grover at al., (1995) unclear definition of jobs may easily become a failure factor when implementing reengineered process.

### **3.3.3 Assigning Effective BPR Team**

Part of success- and failure factors related to organizational structure is assigning effective and cross-functional BPR teams, which can be considered a critical component of successful implementation of reengineered process (Al-Mashari and Zairi, 1999). According to Attaran (2000), an employee who is able to oversee the process from top to bottom should lead BPR and the team should consist of first-rate people from all relevant departments, preferably from both inside and outside the process. Zairi and Sinclair (1995) also emphasize the importance of adequate composition of BPR teams and consider it critical success factor in implementation. If the most talented and strongest employees are not chosen as team members for BPR it may limit the success in the radical redesign of a business process and lead to poor performance. (Attaran, 2000). However, Grover et al., (1995) state that a problem organization may face is the difficulty of finding suitable team members.

Based on research of Al-Mashari and Zairi (1999) the effectiveness of the BPR team is determined by their competency, credibility within the organization, effective team leadership, empowerment within the team, clarity of work approach and specificity of goals. However, according to Grover et al., (1995) even a team of most talented professionals may end up failing if the communication among members is inadequate, if they are not trained enough or if the team is not given enough authority.

### **3.4 Factors Related to BPR Project Management**

According to Grover et al. (1995), the project outcome in BPR can be directly influenced by the way the project is managed. Effective management of BPR consists of several factors, such as adequate strategic alignment and building a process vision, having enough resources for planning and implementation of the reengineered process, efficient learning and possibly using consultants if necessary. (Al-Mashari and Zairi, 1999). Zairi and Sinclair (1995) agree by stating that effective planning and using project management techniques is essential considering the success of implementation, but also emphasize that it is vital to identify the performance measures in order to be able to acknowledge either success or failure of implementation.

#### **3.4.1 Building a BPR Vision**

In order to succeed in implementation of BPR the vision of future processes needs to be clear and compelling (Jackson, 1997) as it directs both long term and daily actions within the company (Al-Mashari and Zairi, 1999). In order to develop a comprehensive vision of the process the business strategy should be evaluated in order to prepare for future processes, assess the customer-based performance targets and set the performance measures for BPR. (Al-Mashari and Zairi, 1999).

#### **3.4.2 Aligning BPR Strategy with Corporate Strategy**

Aligning BPR strategy with corporate strategy is considered important as BPR supports the overall corporate strategy and helps in reaching the goals through more efficient processes, if planned and implemented successfully. The objectives of the

company and the plan on how to utilize the organizational capabilities to reach competitive position in the market are determined by the corporate strategy, whereas the aim of the BPR is to alter the tasks into integrated processes to create capabilities and source of competitiveness by changing the flow of information and material, and the way tasks are performed. (Hammer, 1990). According to Jackson (1997) considering the overall strategic context of growth and expansion, aligning the BPR strategy with the corporate strategy is crucial to the success of BPR efforts. Attaran (2004) states that one of the major reasons given for the high failure rates of BPR has been due to lack of connection to the corporate goals, which enforces Tennant and Wu's (2005) statement on the importance of management competence in prioritizing business processes for BPR based on company's strategic goals.

### **3.4.3 Effective Planning and Adequate Resources**

In addition to being aligned with corporate strategy, BPR strategy needs to be properly planned and managed. (Jackson, 1997). According to Grover et al. (1995) inadequate planning of BPR can be considered a major failure factor influencing the implementation of the process. Planning and implementing BPR properly requires adequate resources (Al-Mashari and Zairi, 1999), but according to Grover et al. (1995) it may be challenging to estimate the amount of human resources, capital and other resources eventually needed in implementation of BPR. Time frame for the BPR needs to be carefully planned and implementation realistically scheduled in order to enable success. (Zairi and Sinclair, 1995). According to Grover et al. (1995) there is a risk that compressing time prevents developing sufficient skills to manage BPR process. Bashein and Markus (1994) also state that having too many development projects ongoing simultaneously might decrease the time to focus on each project, which may cause a risk of failure in implementation of a reengineered process. Too short time frame may also create a temptation to skip the piloting phase of a new process. However, according to Jackson (1997) a comprehensive piloting and especially learning from mistakes is crucial, regardless of how well planned the reengineered process may seem. Attaran (2000) agrees by stating that process testing is important step in order to identify the impacts of a process change. Without understanding the overall impacts of the reengineered process and testing

each aspect of the process, it is impossible to know whether the desired results could be met after implementation. Testing may also help in validation of implementation plan and gaining support for the new process throughout the organization. (Attaran, 2000).

#### **3.4.4 Effective use of Consultants**

In some cases effective use of consultants may enable successful implementation of Reengineered business process (Klein, 1994) due to specialized skills which management or employees of a company may lack, know-how on organizational needs and experience in BPR. In such cases using external consultants may be more cost-efficient than building the knowledge internally. Consultants are also neutral which helps in encouraging unity between members of the organization. (Al-Mashari and Zairi, 1999). However, using consultants may become a failure factor in implementation of BPR in case of poor performance or lack of support from consultants (Grover et al., 1995). According to Al-Mashari and Zairi (1999), the success of consultants depends on their experience in implementing similar projects and their ability to identify the areas where BPR might gain substantial benefits to the company.

#### **3.4.5 Setting Performance Measures and Goals**

Project team should set clear goals for BPR and monitor the progress continually throughout the implementation (Al-Mashari and Zairi, 1999). Performance goals should be set high and targets be extendable in order to motivate high performance (Hall et al., 1993). Appropriate performance measures should also be identified as they indicate the level of achieving the goals (Zairi and Sinclair, 1995). According to Grover et al., (1995) difficulty in establishing performance goals and not assessing the BPR project performance from early stages on may lead to failure in implementation of reengineered process. Al-Mashari and Zairi (1999) agree in their research that poorly defined needs and lack of objectives and clear milestones for BPR throughout the implementation may be considered failure factors. According to Grover et al., (1995) the measures used in evaluation of performance should not be only quantifiable and simple, but include also qualitative measures.

### **3.5 Factors Related to IT infrastructure**

Factors related to IT infrastructure are also considered important for successful BPR implementation (Brancheau et al., 1996) and researchers suggest that using suitable software tools to assist in processes is crucial (Klein, 1994 and Kettinger et al., 1997). According to Ranganathana and Dhaliwal. (2001) effective use of IT and proper IT planning can produce significant gains in performance if BPR is conducted properly. In BPR IT is not just a set of tools for automating or mechanizing processes, it can reshape the way of conducting business by supporting reengineered business processes and helping employees to do their work better. Using software tools tend to improve productivity and quality of work in addition to eliminating non-value added work (Klein, 1994). IT can help in improving information access and enable coordination and communication across the organizational units. In BPR individuals working in isolated departments are often replaced with cross functional teams and IT can facilitate the cooperation and break barriers between departments. (Attaran, 2004).

#### **3.5.1 Evaluating Requirements for IT infrastructure Development**

According to Attaran (2004), succeeding in implementation of reengineered process is possible only if companies focus first on the business processes which influence the competitive factors such as customer service, cost, quality and time-to-market, and evaluate the requirements for IT infrastructure development based on employees' needs. Even though IT is important factor influencing the success of BPR implementation, alone it is not sufficient to guarantee success but should rather be considered as support for the process (Grover et al., 1995). Tennant and Wu (2005) even list it as one of the reasons for failure if new technology is focused more than the business process itself. Al-Mashari and Zairi (1999) agree that building an adequate IT infrastructure is based on analyzing and determining the business process information needs, which are defined by the activities on the process and its reliance on other processes within the organization. If IT infrastructure has not been designed based on needs emerging from reengineered process it may not support the process (Tennant and Wu, 2005). Timing may also be an issue if the company either

fails to deliver the IT systems on time or if the development process is rushed leading to poor results (Al-Mashari and Zairi, 1999).

Venkatraman (1994) states that IT infrastructure and BPR are actually interdependent in the sense that recognizing the information needs for the new business process determines the IT infrastructure requirements and constituents, but on the other hand recognizing IT capabilities may also provide ideas to develop business process even further. Additionally, business process and IT infrastructure should both support the overall business strategy of the company (Kettinger et al., 1997). According to Al-Mashari and Zairi (1999), an effective IT infrastructure follows a top-down approach, starting from business strategy through data requirements to systems and software tools.

### **3.5.2 Creating Integrative IT infrastructure**

In creating effective IT infrastructure, it is essential to integrate various information systems throughout the organization in order to share complete, consistent, accurate and timely information among business units and different processes (Jackson, 1997). According to Al-Mashari and Zairi (1999) creating integrative IT infrastructure to support the business process effectively requires transferring history data to the newest systems. When integrating data, the role of planning, goal-setting and organizational readiness is critical (Al-Mashari and Zairi, 1999). Jackson (1997) states that the interdependence of business units, the degree of difficulty in implementing systems with integrated data and the degree of interoperability between systems determines the complexity of creating effective IT infrastructure with integrated data. Al-Mashari and Zairi (1999) emphasize the importance of integration by commenting that IT may cause implementation of a new process to fail if the compatibility issues of different systems are treated inadequately.

## **3.6 Combining Hard and Soft Factors**

Even though change management has been recognized as crucial part of implementing BPR, failure to consider linkages between hard and soft factors has been

reported main reason for failure in implementation of a new process (Trkman, 2010). It is vital for those leading the change to take holistic and integrated approach with focus on both hard factors, such as structure systems, technology, processes, and soft factors, such as people and organizational culture (Sikdar and Payyazhi, 2014). Grover et al. (1995) agree on importance of combining hard and soft factors by stating that for instance information technology may be important enabler in BPR, but reengineering involves significant changes in roles and responsibilities, organizational structure and values, and none of these changes happen automatically without careful planning and conscious efforts to motivate, educate and communicate with the employees affected. Grover et al. (1995) emphasize the importance of jointly optimizing both technical and social systems, considering also the culture and environment in which the process reengineering occurs.

#### **4 METHODOLOGY**

The research aims at identifying success and failure factors in implementation of reengineered sales and procurement planning process and analyse how they influence the implementation. The purpose is also to find out what are the advantages and disadvantages of implementing incomplete process in order to react to external pressures faster. In this research both primary and secondary data are collected and analysed. In theoretic part of the research the focus is on secondary data, such as books and journals from the field of management, process management and IT, as the topic is discussed in all these sources from different viewpoint. According to Saunders (2009, 61) business and management research, unlike some other academic disciplines, often make use of a wide range of literature. In empirical part of the research mainly primary data is used in form of company publications, training material and company reports in order to gain background information for the case and in designing methods to measure the understanding of the process in theory.

The research begins with reviewing literature related to business process reengineering and more specifically to implementation of reengineered business process and its success and failure factors in order to form a theoretic framework for the research. After that the empirical part of the research focuses on testing which of

the identified success and failure factors apply in implementation of reengineered sales and procurement planning process in case company. The research is deductive in nature as assumptions are drawn based on literature reviewed and tested in order to find out relationship between several variables related to implementation of reengineered business process. According to Saunders (2009, 125-127) deductive research moves from theory to data to explain causal relationships between variables and an important characteristic of deduction is the need to conduct the search in a way that enables variables to be measured quantitatively. Saunders (2009, 140) states that studies focusing on a situation or a problem in order to explain the relationships between variables are termed explanatory researches and therefore this research can also be classified as explanatory research.

The empirical part of the research is conducted as a case study, which involves observation of a particular contemporary phenomenon within its real life context (Saunders, 2009, 145). Case studies are often used in explanatory research as they have the ability to answer questions “what” and “how”. In this research only one case is chosen to be researched and therefore the research is a single case study. According to Saunders (2009, 146) multiple cases often generate more reliable results but choosing a single case is justified if it provides an opportunity to observe and analyse a phenomenon that few have considered before, which is the case with this research, where the focus is on implementation of incomplete business process. More precise classification for the research is embedded case study, as the research focuses on several business units within the organization instead of the organization as a whole.

In case studies the data collection techniques may be various and it is likely to use and triangulate multiple sources of data, which means combining several techniques in order to ensure that data is understood and interpreted correctly (Saunders, 2009, 146). In this research several data collection techniques, such as in-depth interview and questionnaire, are combined in order to gain thorough understanding on the organization and background for the case, but on the other hand also collect quantitative data from various business units. The data collection methods used are described more thoroughly in the following chapters.

## **4.1 Data Collection**

In this research data is collected through interviews and questionnaire, which are described in more detail in the next chapters.

### **4.1.1 Interview**

The empirical part of the research begins with an interview of the project manager in implementation of reengineered sales and procurement planning process. Interview is chosen as a data collection method in order to gain comprehensive view of the current state of the process and implementation plan. According to Byrne (2004, cited by Silverman, 2006, 114) qualitative interviewing can enable achieving a level of depth and complexity that is not possible with other approaches, if it is conducted well. One of the aims of the interview is to use the data collected as background information for designing how to measure the understanding of the reengineered sales and procurement planning process in each business unit. Saunders et al. (2009, 323) state that interviews can be used as part of a survey strategy by using the data gathered in designing the structured interview or identifying the questions for a questionnaire.

The interview is conducted face to face in Finnish as it is the native language for both interviewer and interviewee. The project manager is chosen to be interviewed as she can be considered key informant in the project due to knowledge and experience on the development of the new process. Wellington and Szczerbinski (2007, 82) describe key informant a person who possesses special knowledge and may be the key figure in a piece of qualitative research.

According to Wellington and Szczerbinski (2007, 81) there are several different approaches to interviewing and therefore different ways of planning, structuring and conducting interviews depending on the purpose. Saunders et al. (2009, 323) emphasize that the key point is the consistency between research questions, objectives, the strategy and data collection methods, how they fit to the purpose. The aim of the interview is to collect primary data on the reengineered sales and procurement

planning process and its implementation plan as background information for the future research. The degree of structure chosen for the interview is semi-structured where the interviewer sets the frame for topic to be discussed but gives opportunity for interaction with the interviewee. According to Saunders et al. (2009, 324) semi-structured interview is the most appropriate approach if the questions to be asked are either open-ended or complex in nature, or if the order or logic of the questions may need to be varied. Semi-structured interviews provide the opportunity to probe answers, which can add significance and depth to data obtained and lead the discussion into areas which were not considered when planning the interview, but which are significant for understanding the topic (Saunders et al. 2009, 324). Wellington and Szczerbinski (2007, 83) consider semi-structured interview most valuable approach as it can avoid inflexibility of structured interview, where no deviation is made from wording or order of a set list of questions, but still has a framework unlike unstructured interview, where there is no set questions or rigid order.

The interview consists mainly of open ended questions as illustrated in the list of questions (Appendix 1) in order to give the interviewee opportunity to define the most important issues to be included in the response. It also encourages open conversation, which might provide valuable data on topics which were not considered when planning the interview. According to Byrne (2004, cited by Silverman 2006, 114) open ended and flexible questions are likely to provide better access to interview's understanding, experience and opinions as the response is often more considered than with closed questions. In addition to open ended questions, the interview includes a few closed ended questions to summarize interviewer's understanding on the response. Saunders et al. (2009, 334) state that testing interviewer's understanding allows interviewee to evaluate the adequacy of the interpretation and correct if necessary, which can be used as powerful tool for avoiding biased or incomplete interpretation.

According to Saunders et al. (2009, 326) data quality issues related to semi-structured interviews often relate to reliability, forms of bias or validity and generalisability. The lack of standardisation in semi-structured interviews may lead to concerns about reliability and raise a question whether alternative researcher would reveal

same information. On the other hand, findings of non-standardized research method are not usually intended to be repeatable since they present the reality at the time of collection in a situation which is often subject to change. (Saunders et al. 2009, 326). The concern of reliability is also related to issues of bias, such as interviewer bias and interviewee or response bias. Interviewer bias are caused if the comments, tone of voice or non-verbal communication of the interviewer influences the interviewee's responses creating biased data. Also if the information given in interview is limited, its reliability and validity can be questioned. Even if the interviewee was willing to participate in the interview, they might not reveal or discuss all aspects of a topic causing interviewee or response bias. However, in general the validity of data, the extent to which the researcher gains access to participant's knowledge and understands the meaning of responses, is considered high in semi structured interviews due to possibility of probing or clarifying questions. (Saunders et al. 2009, 327).

During the interview the interviewee provided interviewer extensive amount of information for each question and outside the question topic, but probing questions and clarifying questions were asked to guarantee full understanding of main points for each topic discussed. The interviewee was provided with a list of main topics to be discussed before the interview so that she was able to gather company documentation and prepare for the interview. According to Saunders et al. (2009, 328) giving a list of topics beforehand should promote validity and reliability of the data gained as the interviewee is given opportunity to consider the information being requested, which should decrease the risk of interviewee or respondent bias.

#### **4.1.2 Questionnaire**

The second part of empirical research consist of collecting data from business units through a questionnaire. Questionnaire is chosen as data collection method in order to gain comparable data from several business units in efficient manner. According to Saunders (2009) questionnaire is one of the most widely used data collection techniques as it provides efficient way of collecting responses from a large sample for quantitative analysis. In this research the sample cannot be considered large,

but it is geographically scattered, which makes questionnaire more efficient way of collecting data than for instance interview.

Data collection The purpose of the questionnaire is to collect data on the knowledge of the reengineered sales and procurement planning process in theory in form of an exam, background information from each business unit to be compared with the score on theoretical exam and development of forecast accuracy, and also collect data on implementation of the reengineered sales and procurement planning process from business units' point of view.

Data is collected by sending a questionnaire to business unit buyers after they have been trained for the reengineered sales and procurement planning process and they have conducted their part of the sales and procurement planning process, stock and procurement planning, for the first time. Questionnaire is a self-administered questionnaire, which is completed by respondents online. Questionnaires are sent in two cycles according to training schedules of business units. Respondents have two weeks' time to reply to questionnaire and after deadline a reminder email is sent to those who have not replied. The questionnaire is conducted in the same languages as the training, in English and Finnish. As part of the respondents are able to reply in their native language and part in foreign language, the starting point of each business unit is not completely equal. However, as this solution was chosen in implementation plan of the reengineered process, it is also followed in conducting the research.

### ***Sample***

The sample consists of 40 business unit buyers who have been trained to conduct stock and procurement planning for business units in 19 countries. Business unit buyers have been chosen as sample of the questionnaire, since their tasks and responsibilities are influenced the most by reengineering the sales and procurement planning process. Sales department is also part of the reengineered process, but as their tasks and responsibilities have been trained already before implementing the reengineered process, they are not included in the sample.

At the beginning of the research the intention was to send the questionnaire to the whole population, including all business unit buyers conducting stock and procurement planning. However, during the research it became clear that the implementation of the reengineered sales and procurement planning process is delayed in part of the business units, which inevitably leads to change in the research plan and using sampling, as the overall time frame of the research cannot be extended.

As those business units in which implementation of the reengineered process is delayed from original schedule are excluded from the data collection the probability to be chosen for research is not equal for all business unit buyers. Therefore, non-probability sampling is used in this research. In non-probability sampling techniques, the issue of sample size is ambiguous and there are no rules, unlike in probability sampling (Saunders, 2009, 233). In this case the sample size is 40 people. The sample is selected through purposive sampling, which enables selecting those cases which are most suitable for answering the research questions. In this case the most suitable cases consist of local buyers of business units where the reengineered process is implemented according to original schedule. According to Saunders (2009, 237) purposive sample is often used when working with small samples, such as in case study research, when only informative cases are wished to be used.

### ***Structure of the Questionnaire***

Questionnaire is divided into two sections; the first focusing on background information on each business unit related to success and failure factors discussed in theory section and feedback from respondents on implementation. The second part consists of questions related to process in theory in order to test respondents' knowledge. The questionnaire in general consists of a few open ended questions and different kinds of closed ended questions as illustrated in questionnaire (Appendix 2). According to Saunders (2009, 374-375) open ended questions are useful as they allow respondents to reply in their own way, but on the other hand they are also time consuming to analyse if the number of respondents is high. In this case the number of respondents is relatively low and quantity of open ended questions is limited in order to maintain reasonable level of complication in analysis of results.

Saunders (2009, 375) states that closed questions are usually quick to answer and less complicated to interpret than open ended questions, which is the reason why they are focused on in this questionnaire.

### ***Pilot Testing the Questionnaire***

The questionnaire should be pilot tested before using it to collect data in order to refine the questionnaire so that questions can be easily answered and data can be recorded without problems. The purpose of the pilot test is to find out the time required to fill in the questionnaire, clarity of instructions, questions, layout and possible topic omissions. Pilot test also enables obtaining some level of assessment of the questions validity and reliability. The questionnaire should be pilot tested with a group as similar as possible to the final population in the sample including any major variations in population, which are likely to affect responses. (Saunders, 2009, 394). In this case the technical features of the questionnaire, functionality and time required for answering are tested prior to sending the questionnaire. Also the structure, layout and questions are checked together with the project manager. However, a proper pilot testing is not arranged for the questionnaire.

### ***Validity***

Internal validity refers to questionnaire's ability measure what is intended to measure. Internal validity depends to a large extent on the design of the structure of the questionnaire and questions. (Saunders, 2009, 372). In this case the purpose of the questionnaire is to measure the knowledge on the reengineered process in theory, collect data on implementation of the process from business units' point of view and also receive background information on each business unit to be compared with the exam score and development of forecast accuracy. The questionnaire is designed with this purpose in mind and therefore it is divided into sections of questions focusing on these topics. The questions are designed in a way that they enable measuring the content and gaining the data required.

Content validity refers to the extent to which the measurement questions cover the topic investigated. This could be tested by conducting a thorough literature review on the topic or having a panel to assess whether questions are essential and useful. (Saunders, 2009, 373). In this case the content validity is ensured by designing the questionnaire based on thorough literature review and interview of the project manager. Reviewing the literature ensures that the questionnaire is based on correct themes related to the topic and all necessary areas are covered. Interview of the project manager ensures that the researcher is familiar with the reengineered process and the company so that questions fit the purpose of the company and are directed correctly to respondents. Before sending the questionnaire it is checked and commented by the project manager and project owner within the company in order to correct possible misunderstandings on the process, assess the content of the questionnaire and check the terminology. In this case the questionnaire does not cover all topics discussed in literature on purpose, as the questionnaire is a result of balancing between optimal length and coverage of the topic. The topics and final questions are chosen together with the project manager from longer list of questions based on relevancy to the case company.

Criterion-related validity focuses on the ability of the measures to make accurate predictions. The assessment usually includes comparing data from questionnaire through statistical analysis such as correlation (Saunders, 2009, 373). In this case data is compared through statistical analysis, which is described in more detail in chapter 6.4.

#### **4.1.3 Forecast Accuracy**

The third part of empirical research consists of collecting data on development of forecast accuracy in each business unit after implementing the reengineered sales and procurement planning process. Due to time frame set for the sales and procurement planning process its influence on forecast accuracy can be seen four months after the process has been implemented in each business unit. Due to limited time frame of the research the data on development of forecast accuracy is collected only on first month when the results can be seen, which is July 2016. Therefore, the

research does not generate results on long term influences of implementing reengineered process, but gives opportunity for further research on the topic.

Data on forecast accuracy is collected by interviewing the demand planner who is responsible for reporting the forecast accuracy to the management of the company. Data on forecast accuracy in each business unit is provided in excel form as it includes combined data from several sources. The forecast accuracy from July 2016, which is the first month when results of reengineered process can be seen, is compared to the forecast accuracy from February 2016, which is the last month when all business units researched have conducted the forecast without a common process. The reason why forecast accuracy of a single month is chosen as a base value instead of an average of certain time frame is because the forecast accuracy has not been monitored on a business unit level in case company each month, but on group level. Therefore, the data on forecast accuracy from longer time frame is not available for comparison in business unit level, even though it would help to generate more reliable results.

## **5 CASE STUDY**

In the following chapters the case company and case study is introduced.

### **5.1 Company Overview**

The research is conducted for a multinational company operating in textile service industry. Company has 60 business units in 24 countries and it employed 3200 people in 2015. Turnover in 2015 was 302 million Euros, but company aims at strong profitable growth to reach 500 million Euros turnover in 2020. Profitability of the company will be ensured through active customer partnership and continuous improvement of processes. Company has expanded its operations geographically in the past two decades and therefore has to face twofolded challenges: in older countries of operation the company is often market leader, but competition in the market

is fierce, whereas in newer countries of operation the whole service business is unknown and therefore company has to introduce the services to new markets. (Company sustainability report, 2015)

Company has renewed its strategy for 2020 in 2015 by analysing the operating environment, which opportunities it will offer and what could be done to further improve the service to customers. Along with strategy company's mission and values were renewed. Company's mission is to make customer's everyday life easier and provide the best value on the market through its services. Company's vision for 2020 is to be a solid, half a billion-euro company, achieving excellent customer experience with engaged employees. One of company's values is profitable growth, which is guaranteed by cost-conscious and cost efficient operations. Different projects are prioritized by management according to the overall benefit to the company and they must support company's vision. Resources are allocated for supporting growth and decisions are made on a long-term basis. Another value is long term customer relationships as it values mutual trust, continuous development of operations and mutual benefit in business. Company listens to its customers, anticipates their needs and offers competitive services. Company reacts immediately, with thought to customer demands. (Company sustainability report, 2015)

Along with new strategy case company is also establishing a new management model in 2017 for the whole group and reengineered sales and procurement planning process is part of it. In the new management model the focus is switched from analyzing past performance and short term planning to actively focusing on future and planning 16 months ahead. 15% of efforts is put on analysing past performance, 10% in focusing on the next 1-3 months and 75% on the upcoming 4-16 months in order to know where the company is heading and what should be done to reach the goals. (company training material, 2016)

The purpose of the management model is to support exceeding the set targets irrespective of function through organized, systematic and integrated process. The monthly process drives efficiency and helps in allocating scarce resources. It en-

courages transparency and enables efficient flow of information within the organization through more cross-functional cooperation. Implementing the reengineered sales and procurement planning process is important preliminary step towards achieving the goals of the management model as it prepares business units for the new way of planning. (Company training material, 2016)

The management model is a monthly process, where certain operations on different levels of the organization form a planning cycle as illustrated in figure 4. The first step is a service concept portfolio planning, which defines the service concept on a group level. After that is business unit sales planning, which is followed by the stock and procurement planning. These two step form the sales and procurement planning process discussed in this research. The fourth step is service production planning, where the implementation of the service provided to customer is planned. After that the financial plan is created in business unit level and then reviewed in business unit management team meeting. After that the plan is reviewed on country, business area, region and finally on group level. All ten steps are conducted within a month according to strictly defined schedule and at the beginning of next month a new cycle commences. (Company training material, 2016)

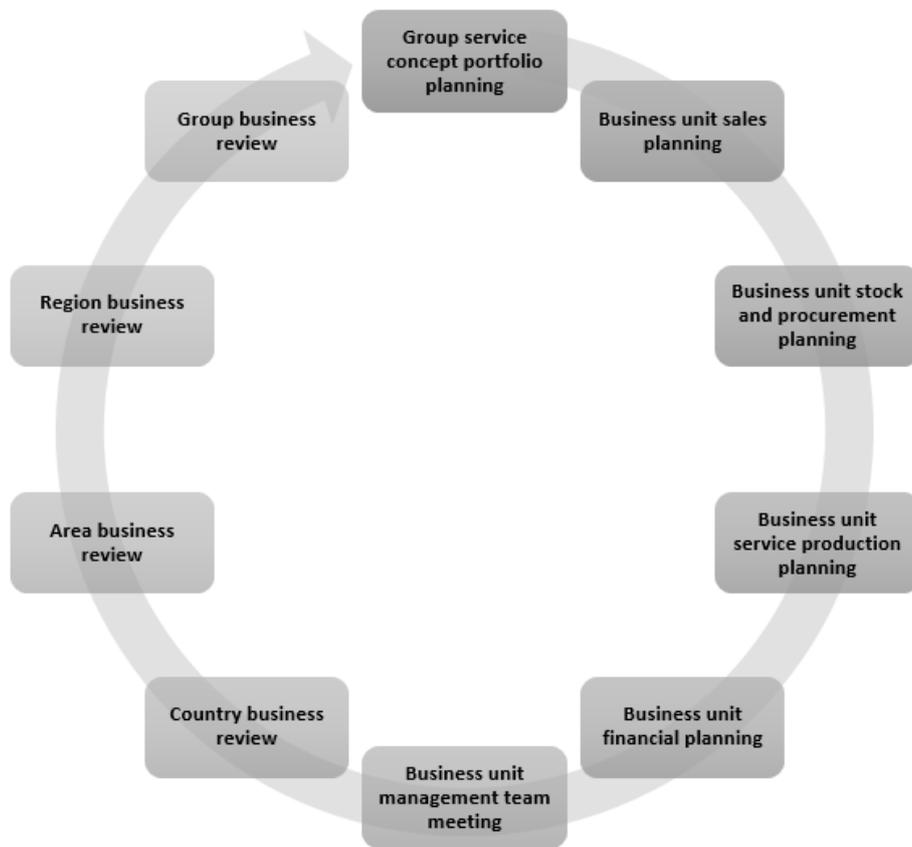


Figure 4 Management model of case company (Case company training material, 2015)

## 5.2 Justification for BPR

The challenge of the company with current planning process is too short sighted prediction of future demand compared to required time of manufacturing process and delivery, which has complicated efficient supply planning, slowed down first deliveries to new customers, impaired product availability to existing customers and prevented cost efficiency in operations. On one hand subsidiaries have not predicted their need until the demand has already realized and goods should be delivered to customer, which has lead to high priced purchases from suppliers locating near subsidiaries to guarantee fast deliveries. On the other hand, subsidiaries have informed demand planner higher sales predictions than what is actually expected to be reached in order to guarantee the availability of goods in central stock. The demand predictions have fluctuated but on average the predictions of sales to new

customers have been six times higher than the actual realized demand, leading to exponential growth in inventory level of garments and materials. Due to short term view and inaccurate demand planning it has been challenging for supply planner to create efficient supply strategies based on fabric stocks of each production country, quantity of goods, capacity and delivery time required. Therefore, company has not been able to take full advantage of having several different supply channels and maximise the profitability of operations and provide customers the best possible value for money. (Interview of the project manager, 2015)

From financial point of view change in the sales and procurement planning process is inevitable to avoid unnecessarily high costs of operations or longer delivery times to new customers leading to customer dissatisfaction. The current process is not in line with the strategy or fully support company's mission of facilitating customers' daily operations through services with lowest overall cost in the market. According to company's values all operations should be designed to support company's vision for 2020 of being financially stable half a billion-euro company having committed employees producing excellent customer experience. With current process the company is not able to produce excellent customer experience, at least with ideal profitability. According to company's values operations should be cost conscious and cost efficient leading to profitable growth, and decisionmaking should be long sighted. Current process is not in line with any of these values, which supports the need for change. (Interview of the project manager, 2015, company sustainability report, 2015)

### **5.3 Process Description**

Sales and procurement planning is done in three different time frames in both services, workwear and mats as more purchasing information becomes available closer to delivery to customer, as illustrated in figure 5.

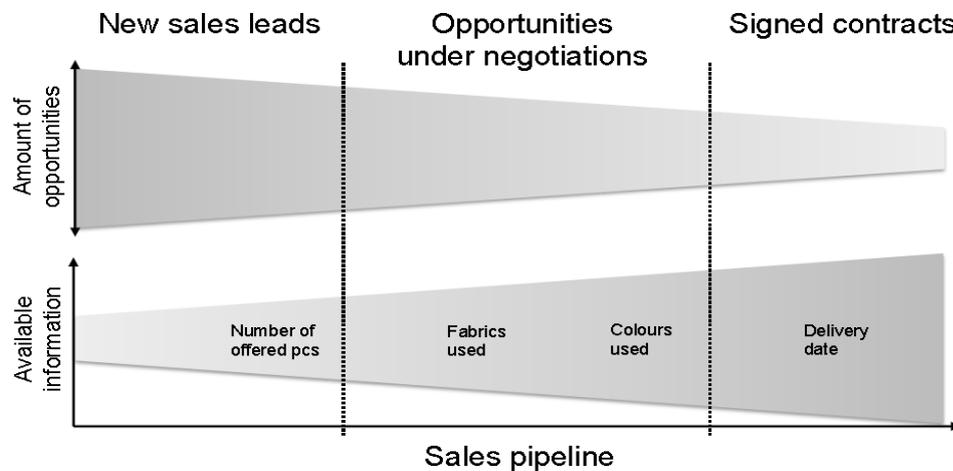


Figure 5 Sales pipeline of case company (Case company training material, 2015)

The longest time frame plan is conducted in pieces to book the capacity from suppliers. In this time frame plan the styles, materials or colors are not specified, only the quantity to be ordered. The second longest time frame plan is conducted on material and color level in order to book the material for each production site. At this point the collection, material and color is known, but specific product information is not needed. The shortest time frame plan is conducted for specific styles. The time frame for planning on each level is different for garments and mats as the lead times are different and planning cycles are based on lead times of each service. (Company training material, 2016)

The process chart of sales and procurement planning process can be found in figure 6. Sales and procurement planning process begins with sales and account marketing or customer service in each business unit inputting their sales plans, including customer opportunities, offers made to customers and achieved contracts into customer relationship management system. Simultaneously group demand planner generates statistical demand forecast proposals for the local buyers to use when generating procurement and stock plan. Business unit buyer then generates procurement and stock plan by using data on sales cases from customer relationship management system after validating which cases are included in the plan, forecast proposal from the demand planner, history data and current stock balance.

The tools business unit buyers use are customer relationship management system and certain excel files, which are created to help in generating the stock and procurement planning temporarily until the IT infrastructure and planning system is developed. After business unit buyer has conducted the stock and procurement plan for the business unit it is reviewed by the business unit manager and business unit buyer in their monthly meeting. After the plan has been reviewed a regional supply chain manager makes validation for the plan and contacts local buyer with questions if necessary. As some of the market areas do not have a regional supply chain manager yet due to unfinished development of organizational structure, the plan is validated by the group demand planner. After group demand planner has gathered and validated all stock and procurement plans to form a group level stock and procurement plan, supply planner creates a supply plan for the capacity and material needed. After supply plan is created, possible gaps in demand and supply can be identified and action plans created to fill in the gaps. After stock and procurement planning, the planning cycle continues to service production planning process. (Company training material, 2016)

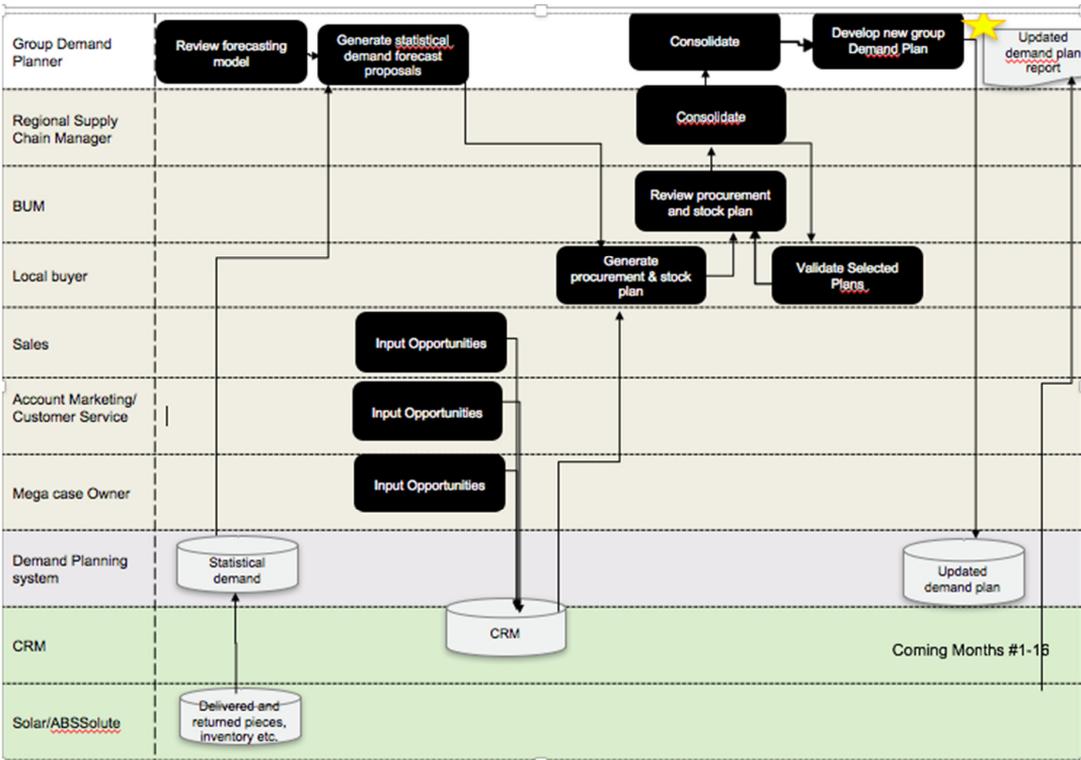


Figure 6 Process chart (Case company training material, 2016)

## **5.4 Goals of the Reengineered Sales and Procurement Planning Process**

In general the reengineered process aims at better planning of sales and procurement with advanced planning solutions and working methods, but several different kinds of specific goals are expected to be reached. Sales and procurement departments have worked in isolated silos before the implementation of reengineered process and local buyer has not had any visibility to the sales pipeline until now. Therefore, sales and procurement planning have been two separate functions and procurement plan has not been conducted based on the sales plans. The reengineered process creates a unified group level process which integrates sales and procurement planning. As business unit buyer needs the information on sales plans from the sales in order to conduct the procurement and stock plan, the collaboration between the two departments is expected to be improved. (Interview of the project manager, 2015)

As each business unit buyer has conducted procurement and stock plan in their own way without any data on future sales plans before implementing the common process, the forecasting accuracy has been relatively fluctuating. Due to common process and visibility to the sales pipeline the forecasting accuracy is expected to be improved. Due to expected improvement in forecast accuracy the company should be more prepared for future contracts with customers by having booked capacity and materials for production or already purchased the pcs to stock, depending on a product type, when the contract is signed. Therefore, the first delivery after contract is signed is expected to be faster than with current process. Being prepared for customers' future needs by booking capacity and materials or having ordered correct items and correct quantities to stock will also lead to better delivery accuracy and products availability for additional orders to existing customers. (Interview of the project manager, 2015)

As the procurement can be planned and optimized better through visibility to future demand, improved customer satisfaction can be achieved in two ways; first of all, the preparations for production can be arranged earlier by booking the capacity and

fabrics, which enables faster deliveries to customers. Secondly the supply planner is able to optimize the production site and supply chain in more cost efficient way, which enables offering customers value for money. (Interview of the project manager, 2015)

## **5.5 Differences between the old and the Reengineered Process**

Before reengineering the sales and procurement planning process there has not been clear group level process for the business units to follow when conducting procurement and stock planning, and business unit buyers had no access to customer relationship management system, so they conducted the procurement and stock plan in the best way they could according to their own estimations on the demand. Through reengineering the sales and procurement planning process a group level operating model is created and all business units conduct the planning process in the same way. The change is the most significant for business units in Finland, as they have not conducted sales and procurement planning locally, but it has been conducted centralized from the headquarters. For the sales the reengineered process should not cause changes as their processes are reengineered earlier already and they should insert the data on sales cases in longer time frame into customer relationship management system. However, since the sales data was not used by business unit buyers when conducting procurement and stock plan, nothing has forced the sales department to follow their process. Therefore, the reengineered process causes changes for sales department in practice as well by creating pressure to register the data on sales cases into customer relationship management system and plan the sales in longer time frame. (Interview of the project manager, 2015)

The group level operating model integrates the sales and procurement planning and brings the planning closer to customer interface. It also forces sales to insert information on their sales cases into the customer relationship management system in a longer time frame providing visibility to the sales pipeline, future textile need and development of inventory level. View to long term textile need also enables identifying possible procurement and inventory level management needs in a longer time

frame, which is not possible with current planning method leading to constant need to extinguish fires. (Interview of the project manager, 2015)

## **5.6 Implementation of Reengineered Sales and Procurement Planning Process**

Focus of the research is in implementation of the reengineered sales and procurement planning process and therefore the research is conducted in a situation where the process has already been redesigned and piloted in Finland and Hungary. Duration of the pilot phase was seven months and it was executed with a mentality that the process is not completely designed when pilot phase begins but developed further during pilot phase with assistance of employees on operational level. During implementation the process is otherwise developed but the supporting IT infrastructure is still being designed and therefore the process cannot be considered complete.

After the pilot phase the reengineered process is implemented throughout the organization gradually, so that all business units are trained for the new process between October 2015 and April 2016. In the following chapters the implementation plan is reviewed in more detail from the point of view of the success and failure factors identified in literature review.

### **5.6.1 Change Management**

As the change in responsibilities is significant and number of employees influenced by the change high, possibility of resistance to change and skepticism towards the new process is identified and the aim is to minimize challenges through considering them in implementation plan.

#### ***Revising Reward and Motivation System***

In case company new reward system is not included as part of implementation plan. Company maintains its current reward system after the change and focuses on other

ways of motivating employees to adopt their new tasks. Therefore, the influence of reward system to implementation of reengineered process is not measured in this research.

### ***Communication***

Communication on the reengineering of sales and procurement planning process is conducted through several channels during longer period of time. The first information was given in spring 2014 when kick-off event was arranged for management. After that general information on the development of the project has been shared mainly through company intranet in order to reach wide audience. In order to provide more specific and targeted information to certain interest groups, separate information sessions for different groups and departments have also been arranged.

In case company employees are provided with opportunity to give feedback already during initial development of the process as employees with different backgrounds are invited to participate in the workshops where the process is reengineered. One of the reasons why the process is partly developed during the pilot phase instead of piloting completely ready process is to receive feedback from the employees whose responsibilities are changed. The idea is to have input from the operational point of view when finishing the design of the process and also provide opportunity for employees to communicate their concerns before the process is fully implemented.

Even though seven trainers are assigned to train the employees during implementation of the reengineered process, communication to employees is handled by both the trainers and project manager, which gives employees possibility to communicate directly to the ones in charge of the change. Training of employees in business units is responsibility of the trainers who mainly answer the questions emerging during the training sessions, but the project manager also participates in some of the training sessions and is available to offer guidance via skype and email if needed. Project manager is available to answer also technical questions related to tools offered to perform new tasks, which also gives the employees opportunity to give feedback

and communicate on shortcomings of the tools offered directly to the project manager. Communication during the trainings and implementation occurs mainly in English due to multinationality of the organization. However, training is provided also in Finnish due to lack of language skills of part of the employees and other countries have the opportunity to translate instructions into local languages if necessary.

In addition to communication between those in charge of the change and the ones influenced by it, the importance of interdepartmental communication is emphasized in case company as cooperation between sales and local procurement needs to work seamlessly in order to enable implementation of the reengineered process. In implementation plan the importance of cooperation and communication between different departments, especially between sales and procurement is emphasized, but responsibility of communication in practice is given to each employee.

### ***Empowerment and Human Involvement***

The new strategy of case company and reengineered sales and procurement planning process encourage empowerment and employee involvement within the organization. In case company reengineering of the sales and procurement planning process is started by arranging workshops for several employees from different countries and positions within the organization in order to involve employees with different backgrounds into the initial process design. Redesigning of the process is continued in pilot phase, in which employees from operational level are also participating. It gives opportunity for the piloting business units to be involved in the process developing, which also enables identifying possible problems and pitfalls in the process, which have not been considered in workshops during initial design phase.

In implementation phase the project manager trains seven employees, who are then empowered to continue implementation of the reengineered process in business units assigned to them. The trainers are trusted to create their own training plan and schedule for each business unit based on what they consider realistic and suitable for their schedule. However, project manager has set certain time frames which need to be followed in order to maintain control over the progress of implementation.

The seven trainers can also decide which training method will be used for each business unit or if they prefer arranging joint training sessions for certain business units. In the first training session of employees the project manager takes responsibility of the outcome, but after that responsibility is transferred to trainers if they feel capable of continuing without immediate support from the project manager. In this way trainers are empowered when they consider themselves capable for the responsibility.

During the implementation business unit buyers are trusted to act proactively to cooperate with the sales department in order to take full advantage of the reengineered sales and procurement planning process. Trainers will support the business unit buyers by checking their forecasts for the first two rounds, but it is up to business unit buyer to contact the sales if any questions occur or data is missing from the system.

### ***Training and Education***

In case company training of employees whose responsibilities are changed due to reengineered business process is managed by seven trainers, who have been chosen by the project manager, so human resources and therefore also financial support are provided for trainings. Before training the employees, seven trainers are educated on their tasks and the process. Trainers have a training session at the headquarters on the phases of implementation. Training sessions are held in Finnish and English due to limitations in language skills and training material is provided in both languages as well.

After trainers are educated on the reengineered business process the training of employees begins. Trainers are able to design the training schedules and methods for each business unit themselves based on time frame set by the project manager. Training of employees can be arranged either via skype or Videra, or by trainer visiting the country to be trained. Trainer may also decide to combine these communication channels or arrange joint training sessions for multiple business units at once.

In case company the project manager is present at the first or first two training sessions, depending on the background knowledge of the trainer on the process and confidence they have on handling the training, in order to monitor the execution of training sessions.

Training of employees starts with introduction via Skype or Videra, which gives a theoretic view on the reengineered business process in order to provide attendees overall picture of the process and how it works. Attendees for introduction session depend on the size of the business unit and who the business unit wants to be attended. The minimum requirement is that at least the business unit manager and local buyer should attend the introductory session, but if the business unit is big more employees could attend. Business units of the company are not similar in all countries, but each of them is slightly different sized, there is variance in responsibilities of employees and also difference in management cultures. Therefore, also employees whose jobs are influenced by the reengineered process and who should attend the training sessions vary. After the first introductory session homework is given based on the starting point of a business unit. For instance, if a business unit buyer has not used certain softwares needed for sales and procurement planning process they are provided with user accounts and required to study introductory course in online learning portal of the company. They are also requested to check that the customer relationship management system has data on sales cases inserted by the sales department and familiarize to the process by watching a video on company's online learning portal.

After the introductory part the training is divided into three parts. At first trainers arrange one-day training at least for business unit manager and business unit buyer on the theory of the sales planning and hands on training session based on the sales case data added to the customer relationship management system by sales department. After that a training session is arranged for sales and customer marketing department in the business unit to guide them in their tasks in the process. Project manager or area trainer checks with sales and customer marketing manager that the system has valid and accurate information to be used by business unit buyers in the next step when they conduct the first procurement and stock plan. In the third

part called plan review the business unit manager and business unit buyer together review the stock and procurement plan conducted. The first two rounds when business unit buyer conducts the plan according to the reengineered process the trainer who has trained them is responsible for reviewing the plan in order to guarantee that the process has been implemented and tasks learnt, so the quality of training is monitored second time after the training.

### ***Creating Effective Culture for Organizational Change***

During BPR it is recognized that there are a lot of different kinds of developing projects ongoing simultaneously in case company, so in general business units and personnel should be prepared for changing working environment. However, it is also recognized that even though employees are aware of the ongoing changes, there are a lot of deep rooted working methods, which might create challenge in implementing the reengineered business process. As employees are not used to having one way of working throughout the organization, the starting point in each business unit is very different. The management culture in each business unit also vary, which inevitably influences the values emphasized and support given to the employees whose jobs are influenced by the reengineered business process. Due to different starting point in each business unit the expectations on implementation of the process are realistic and differing outcomes are expected, even though the training and material provided are the same.

### ***Stimulating Organization's Receptiveness to Change***

The aim is to implement the reengineered process as quickly as possible, even though the supporting IT system is not completely designed and after pilot phase it is recognized that the process will probably not work properly in the first few months as it is expected to take some time to familiarize with the new process, unlearn old working methods and implement the process throughout the organization. The reason why the reengineered process needs to be urgently implemented is that the current way of conducting sales and procurement planning does not serve customers' needs and has caused company problems with high inventory levels and high

cost of operations. Therefore, certain kind of pressure to change needs to be created throughout the organization to stimulate their receptiveness. In case company the problems caused by the current way of working are communicated to employees, but since the current tools available and way of working do not support solving the problems, the reengineered process needs to be implemented. During the pilot phase it became clear that changing the way of working is especially challenging for the sales as they need to start planning much further in future than they are used to. Sales is simultaneously trained for new customer strategy, which also supports the change of planning in longer time frame, but more pressure needs to be created by implementing the process where local purchasing needs their input. The new process supports the way the company would like to plan the sales and manage customer strategies by linking them together, so illustrating that planning cannot be conducted without longer time frame sales plans is needed.

In general, managing resistance to change requires resources and time during implementation of reengineered process and in case company the possibility of resistance to change is identified as scepticism towards the reengineered process could be seen during the pilot phase.

### **5.6.2 Management Competence**

In case company the sales and procurement planning process is reengineered to support the new strategy of the company as the current process does not support planning in a longer time frame, focusing on customer satisfaction or operating in a cost efficient way. Therefore, the management of case company has prioritized such business process to be reengineered, which is currently not in line with company goals. Management has set targets on the time frame of implementing the reengineered process, but at least after pilot phase any exact performance measures are not set nor time frame when results of the new process should be seen. Certain target levels have been discussed on a general level, but clear goals are not set. On corporate level certain KPI's are analysed regularly, excluding figures from India as they follow their own KPI's, but on business unit level only forecast accuracy and lead time of first deliveries to new customers are analysed occasionally. Therefore,

neither BPR team nor the business units know exact target figures to be reached through implementing the reengineered sales and procurement planning process.

### ***Managing Change at Different Levels***

In case company the main responsibility of top management is to identify the process to be reengineered in order to serve the strategic objectives of the company and follow the progress of reengineering and implementation on group level. Reengineering the process, designing workflows and interactions is conducted on another level and managing change is conducted by the BPR team with support from business unit management.

### ***Reengineering Management Style***

In case company there is significant variance in management culture between countries and business units. Business unit managers are in important position considering success of implementing reengineered process and adapting to changes, as their attitude and behaviour may be reflected to subordinates. BPR team has recognized the importance of motivating the business unit managers to commit to changes, but on the other hand also admitted the challenges related to motivating the middle managers and convincing them to support the change by modifying their management style. In case company the high number of subsidiaries in 24 different countries inevitably creates slight variance in management styles, despite common company policies. However, during the pilot phase it is recognized that the variance in management styles between business units is significant and therefore BPR team is prepared for differences in level of success in implementation of the reengineered process throughout the organization.

### ***Risk Management***

In case company the process is implemented with temporary IT infrastructure in 24 countries, so even though the schedule for implementation is realistic, it is expected that challenges may occur and the process might not work flawlessly within the first

months. Continuous risk assessment is conducted by following the progress of implementation in meetings of top management. In case problems occur during the implementation an action plan is conducted to minimize the damage caused.

### **5.6.3 Organizational Structure**

In case company there is variance in organizational structures between business units, but in general they are partly modified based on the reengineered process and tasks by creating new positions and altering job descriptions. Despite common process organizational structures are not unified throughout the organization as size of business units and their operations vary, which influence the need of resources. Job descriptions of each position are unified in all business units, but each employee may be responsible for different positions, depending on the size of the business unit, which influences the tasks and content of the job in practice. Therefore, business unit buyers conducting the sales and procurement planning process may have differing responsibilities.

In case company there is a need to change the way of working in silos into more process based by increasing cooperation between departments, but in practice cooperation is facilitated mainly through communication tools, emphasizing proactive attitude towards interdepartmental co-operation and modifying job descriptions, rather than completely reorganizing the structure of the organization. Even though new jobs are established, job descriptions revised and slight modifications in teams made, the overall changes in organizational structure are relatively subtle during BPR. The most significant change is in business units in Finland, where new jobs are established to perform stock and procurement planning, which has been conducted centralized from headquarters before implementation of reengineered process. Other organizational changes, such as clarifying job descriptions of demand and supply planner, which support the reengineered sales and procurement planning process have been made during the pilot phase.

#### ***New job Descriptions***

In case company the reengineered process causes some changes in job descrip-

tions of business unit buyers, sales team, customer marketing representatives, business unit manager, demand planner and supply planner. New job descriptions and responsibilities have been communicated to personnel as part of the training, but since employees may have slightly different roles in each business unit, the job descriptions do not describe the tasks of any employee specifically.

### ***Assigning Effective BPR Team***

In case company the BPR project is led by an experienced project manager, who has several years' experience in the company working in a position outside the reengineered process. Employees inside the process are involved in BPR during process redesign, pilot and implementation phase, which enables combining viewpoints from both inside and outside the process.

In case company the project manager is competent in implementing projects within the organization and has built credibility among colleagues during the career at the company. Team members are empowered to take responsibility of their own tasks and training of employees has been assigned to seven trainers by the project manager. In case company BPR team it is recognized that the project manager needs to ensure active communication between members, but on the other hand empower them to take responsibility of tasks assigned to them. Members of BPR team are given proper training on the reengineered process and their tasks before they start to implement the process further in business units.

## **5.6.4 BPR Project Management**

### ***Building a BPR Vision***

In case company it is clear that the current process does not support the goals of the company, which has led to reengineering the process. The strategy of the company is reevaluated simultaneously with the BPR project and the BPR vision is created based on the company goals which are already defined by the time process is reengineered. The BPR vision in case company is to achieve longer time frame sales and procurement planning which is based on plans of future sales instead of purely statistical records from the past.

### ***Aligning BPR Strategy with Corporate Strategy***

In case company the main reason for reengineering the sales and procurement planning process is the lack of alignment with the corporate goals. Even though the strategy of the company is redesigned simultaneously with BPR and not all goals are necessarily set in detail, the reengineered process is more in line with the new company strategy and helps in achieving the goals better than the existing one.

### ***Planning and Managing BPR***

In case company the reengineered process is implemented with a very short time frame by finishing the process design during the pilot phase and implementing the process already before the supporting IT system is designed. Even though the process is implemented with a short time frame before it is complete, the implementation of the process and training of employees to their new tasks is conducted with realistic scheduling and careful planning. Reason for this implementation plan is the aim to react to external and internal pressures as quickly as possible and start the change process already, even though it is realized that it will take months before the process works well and tools provided during implementation are only temporary solutions.

In case company there are several development projects ongoing simultaneously and it is recognized that employees might have difficulties in adapting to all the changes. Each development project has its own project team, so execution of the projects is not suffered due to other projects, but there is a risk that employees are not able to fully focus on all projects, which might slow down adoption of new tasks.

### ***Effective use of Consultants***

In case company consultants are used in reengineering the process in workshops and in developing the IT infrastructure related to the sales and procurement planning process. However, during implementation of the process case company relies on the internal expertise and therefore influence of using consultants is not tested in this research.

### ***Setting Performance Measures and Goals***

In case company the BPR team has set clear goals on the schedule of implementing the reengineered process throughout the organization and the project manager monitors the progress. However, no clear goals of the schedule when the results could be seen is set as management has not communicated such targets to BPR team. In case company clear goals are not set for business units. The development of forecast accuracy is monitored and used as a performance measure, but clear target figures have not been set or communicated to business units which they could use to measure their development.

#### **5.6.5 IT infrastructure**

In case company the IT infrastructure is redesigned to support the process, but the system is not ready yet when the reengineered process is implemented. The IT system supporting the process is launched a year after implementing the process and therefore business unit buyers, demand planner and supply planner need to work with the old IT systems and Excel files temporarily. In case company the development process of the IT infrastructure is not rushed, but according to literature reviewed there are risks associated with not launching the new IT infrastructure early enough for the reengineered process.

In general, the starting point of each business unit is slightly different considering the IT infrastructure due to variance in connections and IT capabilities. Therefore, some business unit buyers may face more challenges with the temporary IT infrastructure than others.

### ***Evaluating Requirements for IT infrastructure Development***

In case company the positive side of launching the IT infrastructure later than the process is that the system is built based on the process and actual needs. As the process itself is partly designed during pilot phase and implemented in a short time frame after that, launching supporting IT infrastructure simultaneously would not enable developing the IT infrastructure based on the process.

### ***Creating Integrative IT infrastructure***

In case company the temporary IT infrastructure supporting the reengineered sales and procurement planning process does not enable sharing completely consistent and accurate information throughout the organization as it requires manual work from employees at several stages as there is no integration between the systems, which increases the risk of errors in data. When the actual IT infrastructure is launched integration between systems is taken into consideration, but the temporary IT tools are based on manual work instead of integration as they are not planned to be used in longer time frame.

## **6 FINDINGS AND RESULTS**

In the following chapters the findings and results of the research are introduced.

### **6.1 Success of Implementation**

The reengineered sales and procurement planning process was implemented in 74% of business units within the set timeframe between October 2015 and April 2016. In those 74% of business units there were some changes in schedules of implementation, but the changes occurred within the time frame set. In 9% of the business units the implementation is delayed with one to two months. In one of the business units the reason for delay is caused by failure in changing management culture to support the reengineered process, whereas in rest of the business units the specific reason for delay in scheduling is unknown. In 17% of business units the timing of implementation is still unclear at the end of the research and the delay is caused by major changes within the organization due to resignations of employees and long sick leave of key personnel, which have prevented the training and adoption of reengineered business process.

Achieving some of the goals can be evaluated during the research whereas some of them can be evaluated only further in the future. One of the goals of reengineering the sales and procurement planning process is establishing a group level operating

model, which was achieved in the business units where implementation was successful. Another goal was to increase the visibility to the sales pipeline through adding all sales cases into customer relationship management system and train sales and procurement teams to cooperate according to the process instead of working in isolated silos. The goal was not completely reached during the research as challenges were faced with both having data on sales cases in customer relationship management system and communication between sales and procurement. However, there were differences between business units and in some of them collaboration between sales and procurement has been established and progress can be seen.

In longer time frame the goal is to decrease the inventory level at central stock and material stocks. The process has led to corrective activities in terms of purchasing garments and materials. The aim was also to advantage the different supply channels in order to maximise the cost efficiency of purchases, but during the research the goal was not fully reached as sales cases were still planned on too short time frame in larger scale.

Goals not analysed during the research due to too short time frame for results are speed of first deliveries to new customers and customer satisfaction. One of the goals was to enable faster first deliveries to new customers, but as a lot of information from longer time frame sales cases were missing from customer relationship management system, the effects could not be fully seen during the research. The effects of the reengineered sales and procurement planning process are expected to lead to higher customer satisfaction, but as company measures it only once a year through a survey, the results were not available during the research.

One of the goals which could be analysed during the research is development of forecast accuracy. Due to limited time frame for the research data on development of forecast accuracy is collected only from the first month when results can be seen, so longer time frame development is not analysed and it remains a topic for further research. According to the results the forecast accuracy improved 2,4 percentage

units on average in the business units responding to questionnaire. There was variance in results between business units as in some of them the development was strongly negative whereas in others it was positive, so it cannot be stated that reengineering the sales and procurement planning process would have lead to stable improvement in forecast accuracy.

## **6.2 Data Analysis**

The data collection methods chosen require both quantitative and qualitative data analysis. In this research quantitative analysis is used to analyse the data gained through quantitative questions in questionnaire. The questionnaire includes a theoretical exam to test the knowledge of respondents on the reengineered sales and procurement planning process based on the training material. Statistical analysis is used to compare certain factors with the scores of the theoretical exam in order to find out which factors influence learning the reengineered business process.

Statistics from questionnaire is applied in order to assess factors influencing development of forecast accuracy as improvement of forecast accuracy is one of the goals of reengineering the sales and procurement planning process. Forecast accuracy is used as a way to measure the success of implementing the process as it is one of the few quantifiable results which can be seen within the time frame set for the research. Data on forecast accuracy is collected from the last month before the reengineered sales and procurement planning process is implemented and on first month when the results can be seen, which is four months later.

Qualitative data gained through open-ended questions in questionnaire and interview of the project manager are analysed by categorizing data, which aims at grouping chunks of data and recognizing relationships between them. (Saunders, 2009, 492). The data gained is categorized based on the themes arising from questionnaire and interview which enables recognizing connections between quantitative and qualitative data.

## 6.3 Results of the Questionnaire

Response rate to questionnaire sent is 60% and therefore results of the research are based on 24 responses. In some cases the reason for missing response to questionnaire became clear during the research. One of the respondents resigned during the research and her position was not fulfilled during data collection. In one of the business units implementation of the reengineered process was suddenly postponed, which prevented respondents from participating into the research. One of the respondents was on annual leave during the research and was not reached before the end of data collection. The reason for other respondents not participating into the questionnaire is not known.

### 6.3.1 Communication

Respondents were asked if they consider the amount of information given sufficient. 75% of the respondents consider that they have received enough information on the new sales and procurement planning process, whereas 25% consider that the information given is not sufficient. (chart 1.)

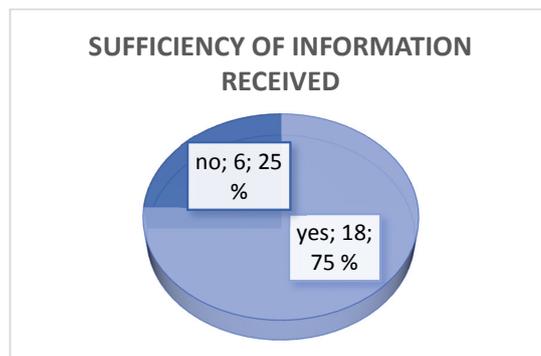


Chart 1 Sufficiency of information

The ones who consider information provided insufficient would have preferred more thorough and in depth explanation on influences of the reengineered process in practice. They would also have preferred information on the long term development of the process, especially on time frame for the establishment of new IT infrastructure to support the sales and procurement planning process.

92% of the respondents also consider that they have been given opportunity to ask questions about the reengineered process or their tasks if necessary, but 8% of the respondents feel that this possibility has not been provided. (chart 2.)

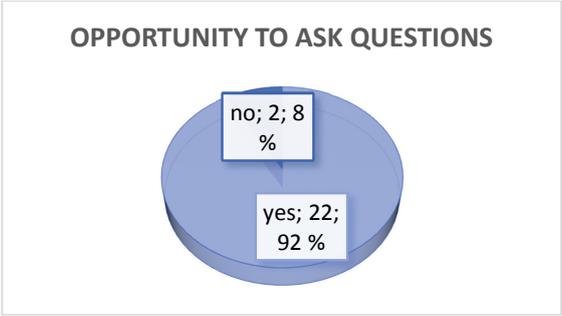


Chart 2 Opportunity to ask questions

### 6.3.2 Training and Education

The training method of respondents was asked in order to compare the results with the score of theoretical exam to find out which training method is the most efficient. 50% of the respondents have been trained with live trainings, 21% with Skype training and 29% with both these methods. (Chart 3.)



Chart 3 Training method

Respondents were also asked to evaluate the training methods used on scale 1 to 5 from lowest to highest. Slightly more than half of the respondents, 58%, consider the training methods used appropriate. None of the respondents thought that the training methods did not support their learning at all and 21% describe the methods rather appropriate, but would have preferred some other method. 13% regard the training methods as very appropriate and 8% rate them perfect methods to support their learning. (chart 4.)

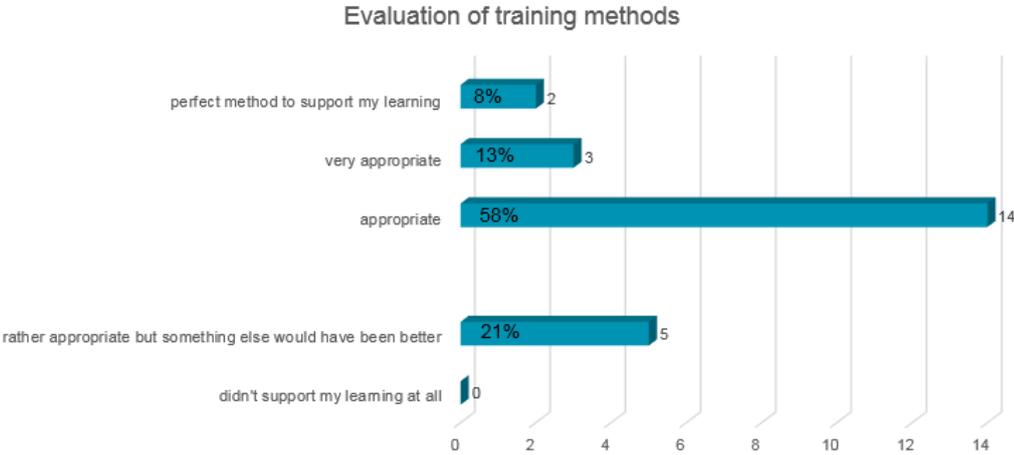


Chart 4 Evaluation of training methods

Respondents were asked which training method they would prefer and as several training methods are used in implementation of a reengineered sales and procurement planning process, respondents were also able to choose several training methods they would prefer when implementing a process. Live training is the most preferred training method by 50% of the respondents. 46% of the respondents would have preferred online course on reengineered process and 25% would have liked to have a session where questions on the tasks and process could be asked. 21% of the respondents would have preferred to have more training sessions. 13% of respondents preferred Skype or Videra and 13% of the respondents suggest other training methods to be used, which would include common training for all employees at once instead of implementing the process in stages within a certain period of time. (chart 5.)



Chart 5 Preferred training methods

Respondents were asked to evaluate the amount of training provided in order to collect feedback for future implementations and to compare the evaluations with the score of theoretical exam. 50% of the respondents consider that the amount of training has been sufficient, whereas 25% consider the amount rather sufficient but would have preferred more training. 13% of the respondents consider that amount of training is not sufficient at all, but on the other hand 13% also considered that the amount of training is perfect. None of the respondents consider the amount of training provided too much. (chart 6.)



Chart 6 Evaluation on amount of training

According to general feedback given some of the respondents would have needed more practical training on conducting the forecast by using the tools provided, whereas others would have preferred a step by step process chart to guide them through the process until they are completely familiar with it. Respondents also requested more training to be provided on how each action in the process influence the outcome.

### 6.3.3 IT infrastructure

Respondents are asked to evaluate the temporary IT tools provided as the supporting IT infrastructure is still being developed during implementation. 58% of the respondents consider that the tools provided to perform the reengineered sales and procurement planning process could be better, which is not surprising considering that the new IT infrastructure to support the process is not established yet and the temporary tools are based on mainly Excel files. However, 21% of the respondents consider the temporary tools provided good enough to perform the tasks. 8% consider the tools not sufficient at all whereas 8% also consider the tools very good. 4% of the respondents consider the tools provided excellent and would not need any other tools. (chart 7.)

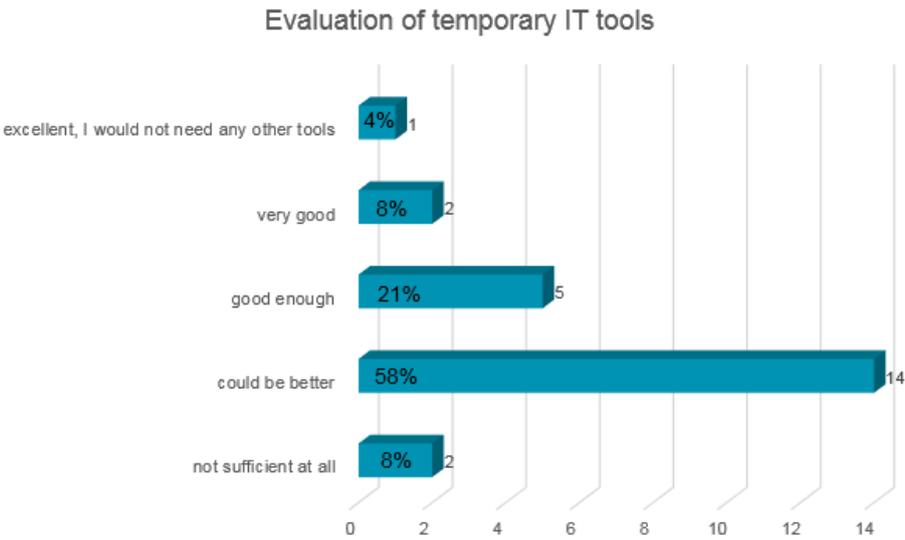


Chart 7 Evaluation of temporary IT tools

In open feedback question at the end of the questionnaire the tools and IT infrastructure provided were commented on the most. The current tools require a lot of manual work, which makes the process very slow. The several Excel files designed to support creating the plan are not integrated to any IT systems of the company, work very slowly due to heavy construction and therefore it can take long time to work on the plan for a business unit. In some of the business units or countries the internet connection is rather weak, which also prevents using the systems or at least complicates saving the data into correct platforms. The customer relationship management system also works very slowly in some of the countries, which creates its own challenges when gathering data on sales cases. In some of the training sessions the IT systems did not work, so trainees were not able to try the systems themselves but had to rely purely on slides, which naturally decreases the value of the training.

#### **6.3.4 User Instructions**

Respondents were asked to evaluate the instructions provided to collect feedback related to raining and education. Responses are relatively scattered and no clear opinion can be drawn based on them. 38% of the respondents consider the instructions very clear and helpful, whereas 33% consider them rather helpful, but think they could have been clearer. 21% of the respondents consider the instructions sufficient, but 8% thinks that instructions are not helpful at all and they have not understood them. None of the respondents think that the instructions supported their learning perfectly and replied all their questions. (chart 8.)

### Evaluation of user instructions

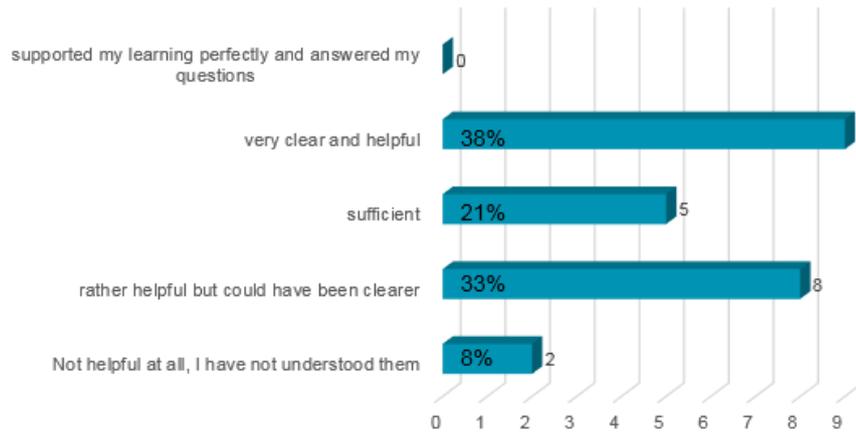


Chart 8 Evaluation of user instructions

According to open comments the instructions should include step by step process chart to guide through the tasks and all instructions should be given in native languages of each country from the headquarters, whereas now the instructions were in English and Finnish and each trainer had the responsibility to translate them if necessary. The instructions were also considered confusing due to several steps to be taken, but this might also be caused by the temporary tools, which require several detailed steps to conduct the forecast.

#### 6.3.5 Reengineered Process

Respondents were asked the duration of conducting the forecast according to reengineered process in order to see if there is variance between business units. As the efforts put in conducting the forecast seemed to influence the results during the pilot, time invested in conducting the forecast is compared with development of forecast accuracy later in the research. For two thirds of respondents it takes more than two hours to conduct the stock and procurement planning. For 25% it takes 1-2 hours and for 8% from 30 minutes to an hour. (chart 9.)

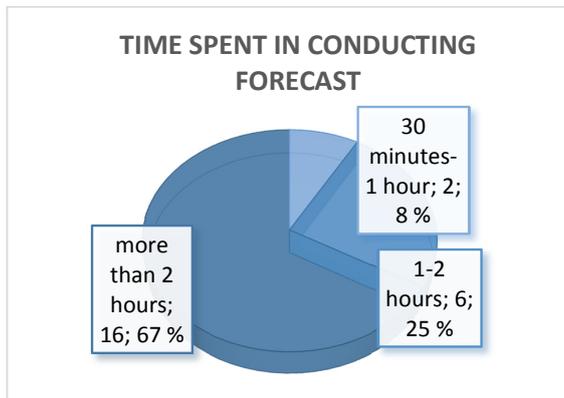


Chart 9 Time spent in conducting forecast

Respondents were also asked if they analyse the data available before using it in conducting forecast in order to know if they validate the data before use. Results are also considered one way of measuring proactiveness of respondents and therefore the results are compared with score of theoretical exam and development of forecast accuracy later in this research. 71% of respondents analyse the sales data before using it to create stock and procurement planning, whereas 29% admit that they do not analyse the data. (chart 10.)

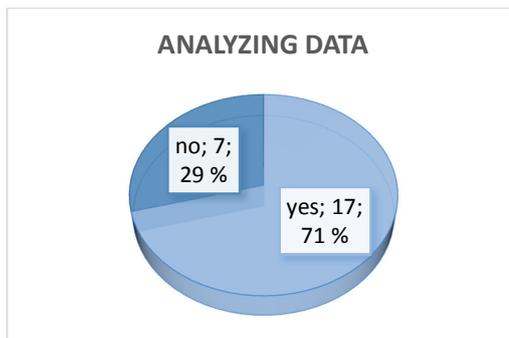


Chart 10 Analyzing data

This means that almost third of the respondents do not validate the sales plans before creating stock and procurement planning and one phase of the process is left out. Those who do analyse the data check what is the demand and when it is expected to be realized, what are the items that should be purchased and what is the

probability for the sale to happen. Several respondents check the cases with sales and have personal meetings with the sales manager.

Respondents were asked if they contact sales during the process in order to know if communication has been established. 88% of the respondents have contacted sales to talk about sales cases, whereas 12% admitted that they have not done that. (chart 11.)

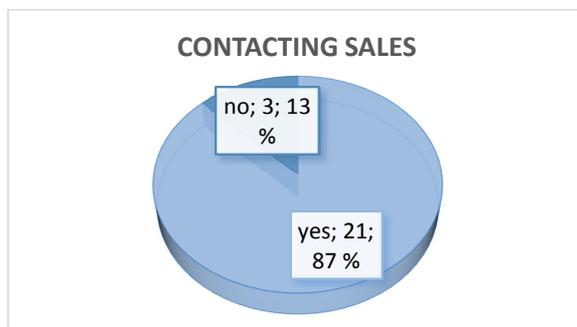


Chart 11 Contacting sales

Based on the pilot testing in those business units where business unit buyer proactively checked the data with sales the process was implemented more easily than in those business units where local buyer did not proactively contact sales to ask about the sales cases. Therefore the influence of contacting sales on development of forecast accuracy is analysed in following chapter 6.4.

### 6.3.6 Management Support

In questionnaire the respondents were asked to reply whether they have been supported by the management, but also sales and colleagues as they relate to the overall process. In open-ended question respondents could describe in more detail what kind of support they have received. (table 1.)

total	yes	no	yes%	no%
BUM/MD	16	8	67	33
sales and customer service managers	16	8	67	33
colleagues	18	4	82	18

*Table 1 Support*

67% of respondents consider being supported by the business unit manager during the implementation of reengineered sales and procurement planning process, whereas 33% of respondents do not. As respondents are not able to reply to questionnaire as anonymes, the ability to trace replies creates a risk of reducing respondents' willingness to reply to sensitive questions like this honestly. Therefore reliability risk with the data exists. In open comments several respondents describe receiving support from managing director or business unit manager if the sales has not filled in their sales cases into customer relationship management system. Managing director has for instance pushed sales to fulfill their tasks of the process, help in communication between different departments and guided in problem solving. Management has also given time and support in learning new tasks and implementing the process within the business unit. Some managers have shown exceptional interest in development of forecast accuracy during the implementation and aimed at improving the commitment of managers and supervisors to the change.

67% of respondents consider receiving support also from sales and customer service managers, whereas 33% do not. The most commonly mentioned support relates to communicating to sales about the missing sales data on customer relationship management system and reminding the sales about importance of following the process steps. Sales managers have also shown their support by arranging time for meetings and clarifying the sales cases if necessary.

Majority of respondents, 82% consider receiving support from colleagues, but 18% of respondents do not. For some respondents colleagues are the ones who have given guidance on using the tools, solving problems and learning the new process.

Colleagues have been the ones to ask first in case a problem or a question emerge and they are the most important source of emotional support during the change.

**6.3.7 Challenges**

Respondents were asked what kind of challenges and how serious they have faced when conducting procurement and stock plan for their business unit according to reengineered process. Options were chosen based on challenges emerged in pilot phase. (chart 12.)

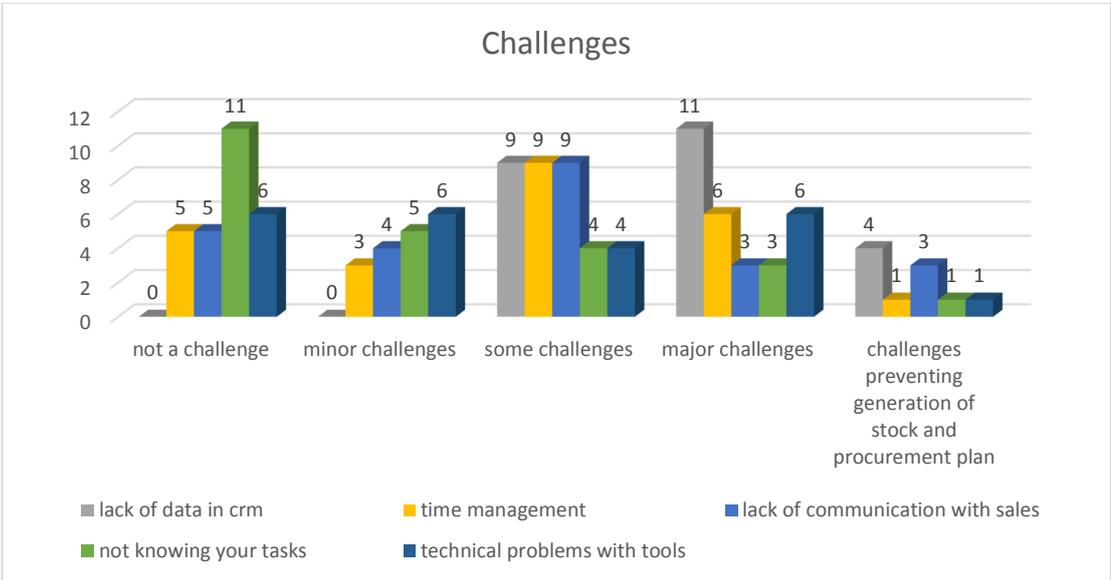


Chart 12 Challenges

All respondents has faced challenges with lack of data in customer relationship management system on some level. 38% of respondents have faced some challenges, 46% major challenges and 16% challenges which have prevented them from conducting the stock and procurement planning. These results are supported by the open feedback where several respondents reported on difficulties to conduct stock and procurement planning for their business unit as the sales department has not filled in data on sales cases into customer relationship management system.

79% of respondents has faced challenges of some level with time management when conducting stock and procurement plan. 13% of respondents had faced minor challenges, 38% some challenges, 25% major challenges and 4% challenges which have prevented them from conducting the stock and procurement planning. In open feedback the respondents have commented on the slowness of the tools provided and time required for all manual work.

Lack of communication with sales was considered a challenge by 79% of the respondents. 17% of the respondents have faced minor challenges in communication with sales, 38% have faced some challenges, 12% major challenges and 12% challenges preventing them from conducting stock and procurement planning. Majority of the respondents have contacted the sales with questions related to data on customer relationship management system and two thirds had received support from sales during the implementation, but still respondents consider that there are problems with communication between departments.

54% of respondents has faced challenges with lack of knowledge on tasks. 21% of respondents have faced minor challenges, 17% some challenges, 12% major challenges and 4% challenges which have prevented them from conducting procurement and stock plan. According to feedback given especially those employees who have completely new jobs created to support the reengineered process have challenges in knowing their responsibilities.

Technical problems with the tools provided was considered a challenge by 73% of the respondents. 26% of respondents faced minor challenges, 17% some challenges, 26% major challenges and 4% challenges which prevented them from conducting stock and procurement planning. In this challenge there was great variance between business units as in some business units there were no challenges, whereas in other the challenges were severe. The tools provided work better in some countries, whereas in others the IT connections are worse which inevitably influences the performance of tools provided.

### 6.3.8 Perceptions of the Reengineered Sales and Procurement Planning Process

Perceptions of the reengineered sales and procurement planning process were asked to research if respondents are able to connect the process with its goals and whether negativity or positivity could be seen in responses. The options are chosen based on the goals of reengineering the process and feedback received during pilot. (table 2.)

		%
advantageous for the company	12	50
challenging to adopt	11	46
improves co-operation with other departments	10	42
time consuming	7	29
helps in improving customer satisfaction	8	33
generates unreliable forecasts	1	4
leads to faster start ups	6	25
improves forecast accuracy	15	63
helps to improve product availability	9	38
leads to worse product availability	0	0

*Table 2 Perceptions of reengineered sales and procurement planning process*

Half of the respondents consider the reengineered sales and procurement planning process advantageous for the company. However 46% find the process challenging to adopt and 29% consider the process time consuming. 42% of respondents believe that it improves cooperation between departments but only 33% sees that it leads to increased customer satisfaction. Only 25% of respondents believe that the reengineered process would help in delivering new projects to customers faster but

still 38% consider that product availability will be improved. 63% of respondents believe that the reengineered process will help in improving forecast accuracy and only 4% believe that unreliable forecasts would be generated due to the reengineered process. None of the respondents think that the product availability would become worse due to the reengineered sales and procurement planning process.

The responses indicate both positive and negative results. Considering the positive results, more than half of the respondents consider that the forecast accuracy, which has been very low and unstable, could be improved through the reengineered process. Half of the respondents see the process a positive change for the company in general, which is high percentage compared to other response options, but can also be interpreted that the other half does not consider the process advantageous for the company. Slightly worrying result is that clearly less than half of the respondents see the connection between the reengineered process and its goals; improved product availability, faster deliveries of new projects to customers, improved customer satisfaction and improved cooperation with other departments. Some of the respondents consider that the reengineered process has been challenging to adopt and time consuming to execute, which is an indication of the challenges faced and described in open feedback.

### **6.3.9 Knowledge on the Process in Theory**

The knowledge of the process in theory was tested with a theory exam based on the training material provided. Respondents receive one point for each correct answer and one point is also deducted from each incorrect answer. The maximum score in the exam is 15 points and an average score within the respondents is 7,6.

At the beginning of the exam the respondents were asked about the differences between the old and the reengineered process. Some of the response options are correct whereas others are incorrect and respondents should identify which statements are true. (table 3.)

		%
group-level operating model	9	38
procurement and stock plan is purely based on history data	7	29
integrated sales and procurement plan	8	33
procurement and stock plan is made based on sales plans	9	38
short term view about textile needs and stock development	2	8
Long term view about future textile needs and stock development	12	50
Long term view about identified possible future procurement and stock level management needs	11	46
procurement and stock plan is purely based on CRM data	15	63

*Table 3 Differences between old and reengineered process*

38% of the respondents recognize that the new process is a group level operating model, whereas 62% of respondents did not identify that difference to the old process. 29% of respondents think the procurement and stock plan is purely based on history data, whereas the purpose of the new process is to change the focus to be mainly in future demand instead of history data, which is noticed by 71% of respondents. 33% of respondents consider it a difference that the new process creates integrated sales and procurement plan, whereas 67% does not recognize that before the new process the sales plan and procurement plan were conducted completely separately. Related to previous question, 38% recognize the difference that procurement and stock plan is made based on sales plans, whereas 62% did not consider it a difference, even though sales plans have not been used in creation of procurement and stock plan before. 8% of the respondents consider that the new

process provides short term view about textile needs and stock development, which is not completely incorrect, but not a difference to the current process, which was noticed by 92% of respondents. Half of the respondents recognized that the correct difference is that unlike the old process the new process provides long term view about future textile needs and stock development. Related to previous question, 46% of respondents identified that the new process provides long term view about identified possible future procurement and stock level management needs, whereas more than half did not recognise this difference. 63% of the respondents think that the new sales and procurement planning process is purely based sales case data from customer relationship management system, which is incorrect as part of the data used is from demand planner system, so 37% of respondents had correct answer. In general the differences between the new and old process are not clear to all respondents based on the responses, which supports the feedback given by respondents that they would need more training on the influences of the new process in practice.

The question about the data used in conducting stock and procurement planning aims at finding out if it is clear for all respondents what data they are using in their tasks. None of the response options is incorrect, so the aim is to check if respondents recognize the data their forecast consists of (table 4.)

	total	%
CRM data	19	79
history data	16	67
forecast proposal from demand planner system	19	79
own experience from the past	14	58
current stock balance	12	50

*Table 4 Data used in conducting forecast*

Majority of the respondents recognize the use of CRM data and forecast proposal from demand planner system, but only half or slightly more recognize the use of

current stock balance, own experience or history data. The results indicate that the data used in conducting the forecast is not completely clear to all respondents, at least in terms of terminology.

Respondents were asked to identify the responsibilities of process roles by selecting a correct response option for certain tasks conducted in the process. The results reveal that the responsibilities in the process are rather clear to respondents as 100% of respondents considered inputting sales plans and offers into customer relationship management system responsibility of the sales department. (chart 13.)



Chart 13 Sales plans and offers

92% of respondents also recognized that generating procurement and stock plan is a responsibility of a business unit buyer. (chart 14.)

### Responsibility of a business unit buyer

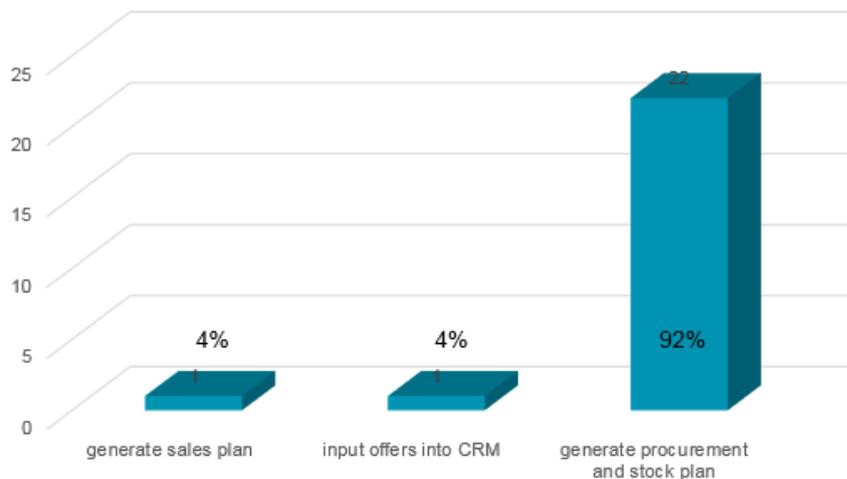


Chart 14 Responsibility of a business unit buyer

Respondents were also asked to identify the time frames in which the forecast is conducted based on the reengineered process by selecting correct time frame for each forecast type. The time frame for generating the sales and procurement planning is not completely clear to all respondents based on the responses to questions. Half of the respondents know that the procurement plan in pieces is needed 9-16 months into the future for both work wear and mats to ensure capacity, whereas 46% considered the time frame to be 4-8 months and 4% 16-32 months. (chart 15.)

### Pcs level procurement plan

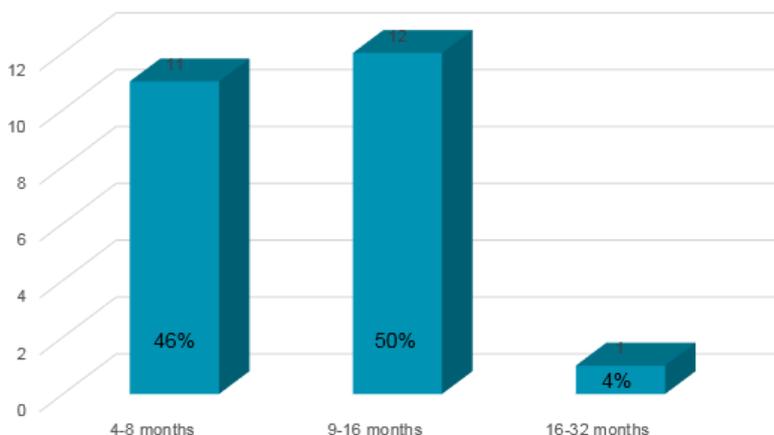


Chart 15 Pcs level procurement plan

54% know that in material and color level the procurement plan for work wear is conducted 5-8 months and for mats 4-8 months into the future to reserve or purchase needed materials. 25% considered the time frame to be 9-16 months for workwear and 2-3 months for mats, and 21% thought the time frame to be 1-3 months for workwear and 5-12 months for mats. (chart 16.)

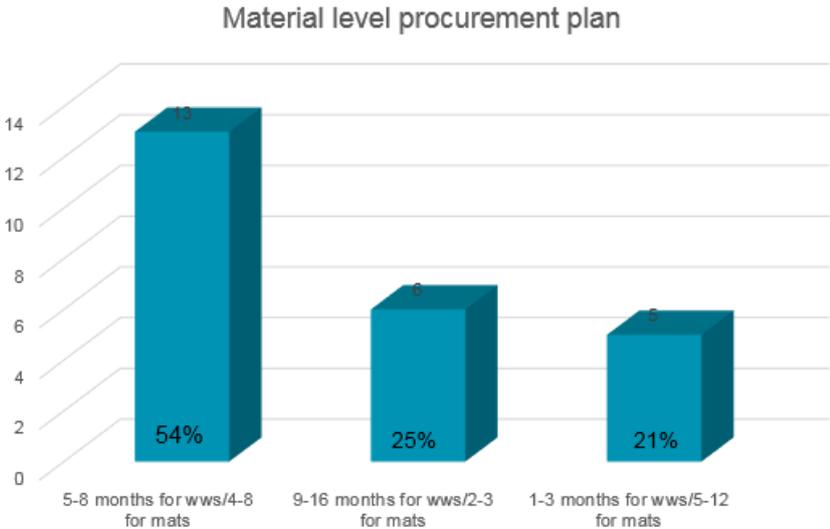


Chart 16 Material level procurement plan

For the near future product level procurement plan 75% know that time frame for work wear is four months and for mats two months to ensure product availability to customers. (chart 17.)

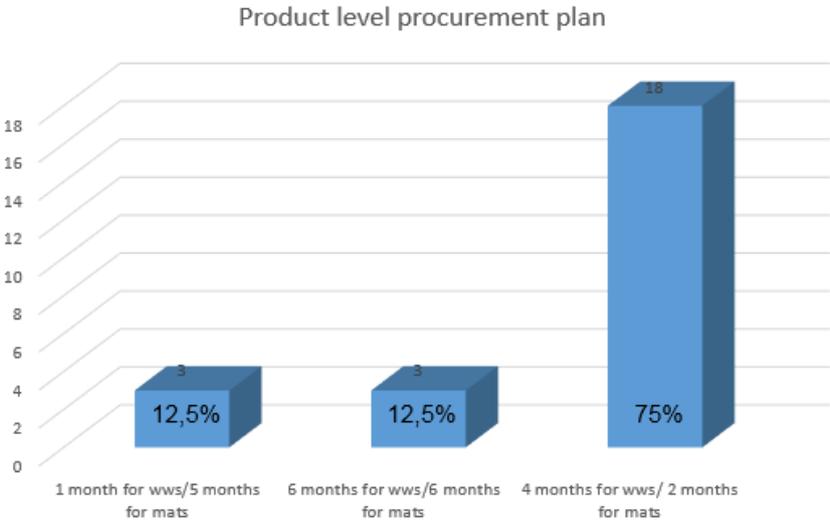


Chart 17 Product level procurement plan

In general the results show that as the sales and procurement planning has not been conducted in a long time frame into the future, it is challenging for employees to realize and learn the new time frames for planning. Short term time frames are easier to adopt as employees are used to working within shorter time frame into the future.

### **6.3.10 Open Comments and Feedback**

Clarification of new job description is requested, as the role and responsibilities are not clearly defined. Even though the tasks are very interesting, the workload is constantly increasing and getting out of control as clear boundaries are not set.

In general the process is considered advantageous for the company and positive development, but respondents are still insecure on the process and using the tools provided. More training on both using the tools and understanding the bigger picture is requested in order to perform the tasks.

## **6.4 Statistical Analysis**

The following chapters describe the statistical analysis conducted to find out which factors influence the learning of reengineered process and development of forecast accuracy.

### **6.4.1 Data**

The data analysed has 15 independent variables which are chosen to be included in the questionnaire based on literature review and interview of the project manager. The data consists of descriptive data, more precisely dichotomous data in which categorical data is divided into two sets such as “yes” and “no”, nominal data in which categorical data can be divided into more than two sets but not placed in order, such as different training methods, and ordinal data in which the relative position of each case in the data set is known, even though the numerical measure in which the position is based on is not recorded, such as responses of rating or scale

questions. (Saunders, 2009, 418). The independent variables to be analysed are the following:

- Trainer (6 trainers)
- Language used in training (foreign or native)
- Training method used (Live, Skype or both)
- Perception of respondents on amount of training (scale 1-5)
- Analyzing data available in customer relationship management system (yes or no)
- Contacting sales about the sales cases in customer relationship management system (yes or no)
- How much time is spent in conducting the forecast (scale 1-4)
- Management support (yes or no)
- Support from sales (yes or no)
- Support from colleagues (yes or no)
- Challenges with lack of data in customer relationship management system (scale 1-5, 1= no challenges and 5= challenges preventing generation of stock and procurement plan)
- Challenges with time management (scale 1-5, 1= no challenges and 5= challenges preventing generation of stock and procurement plan)
- Challenges with communication with sales (scale 1-5, 1= no challenges and 5= challenges preventing generation of stock and procurement plan)
- Challenges with not knowing the tasks (scale 1-5, 1= no challenges and 5= challenges preventing generation of stock and procurement plan)
- Technical challenges with tools (scale 1-5, 1= no challenges and 5= challenges preventing generation of stock and procurement plan)

There are also two dependent variables; score of theoretical exam which measures the knowledge of the reengineered sales and procurement planning process in theory, and development of forecast accuracy which measures if the forecast accuracy has improved through implementation of the reengineered sales and procurement planning process.

In order to enable statistical analysis, some of the variables require standardization as they are not measured with numerical values. Binary variables which were measured with “yes” or “no” are coded with dummy variables 0 and 1, so that yes equals 0 and no equals 1. All variables using scale 1-5 are coded from 0-4, so that 0 equals the worst or lowest value and 4 equals the best or highest value. Factor variable “trainer” is coded to dummy variables, where zero equals trainer number 1 and 5 equals trainer number 6. Training method is also coded to dummy variables so that 0 equals live training, 1 equals skype and 2 equals both training methods. Also the names of the variables are changed into abbreviations to enable statistical analysis with R, which is the statistical analysis tool chosen to be used. (table 5.)

Trainer	Trainer
Language used in training	Language
Training method used	Method
Perception of respondents on amount of training	Training-Time
Analyzing data available in customer relationship management system	CRMa
Contacting sales about the sales cases in customer relationship management system	Csales
How much time is spent in conducting the forecast	TimeSpent
Management support	SupportM
Support from sales	SupportS
Support from colleagues	SupportC
Challenges with lack of data in customer relationship management system	CRMdata
Challenges with time management	TimeMan
Challenges with communication with sales	ComProb
Challenges with not knowing the tasks	Tasks
Technical challenges with tools	Tech
Score on theoretical exam	Score
Development of forecast accuracy	Daccuracy

*Table 5 Abbreviations*

#### 6.4.2 Factors Influencing Learning the Reengineered Sales and Procurement Planning Process

Statistical analysis begins by analysing the influence of the following independent variables on dependent variable, score of theoretical exam: Trainer, training method, perception of respondents on amount of training, analyzing data on customer relationship management system, management support, support from sales, support from colleagues, challenges with lack of data in customer relationship management system, challenges with time management, challenges with communication with sales, challenges with not knowing the tasks and technical challenges with tools. At first the correlation between numerical variables and score of theoretic exam is tested in order to measure the strength of the linear relationship. (Table 6.)

	Training time	CRMa	Support M	Support S	Support C	CRM data	Time Man	Com Prob	Tasks	Tech
Score	0,0475	-0,3171	-0,1053	-0,0089	-0,1888	0,2652	0,4086	0,4469	0,4009	-0,2083

Table 6 Correlation between numerical values and score of theoretical exam

The problem with correlation matrix is that correlation between a single variable and score of theoretical exam does not consider other variables and their influence, and therefore it cannot be directly stated how different variables influence the score of theoretical exam (Saunders, 2009, 459).

As correlation analysis does not consider the influence of several variables simultaneously, a linear regression analysis is used to provide thorough analysis of the variables as it enables assessing the strength of relationship between a numerical dependent variable and several independent variables (Saunders, 2009, 461). For linear regression analysis it is problematic that there are almost as many variables as there are observations and also high quantity of dummy variables. (Ross 2010, 592). Therefore the aim is to decrease the amount of variables before regression analysis is conducted. Variables could be decreased through factor analysis, where statistical calculations are used to identify common explanatory factors behind different variables. However, the number of observations in this research is too low for

factor analysis and therefore the factors which should influence the score of theoretic exam are defined by the researcher without statistical calculations based on the literature review conducted. (Stock & Watson, 2012)

Some of the independent variables can be grouped based on logical thinking. It is logical to think that a trainer might prefer to use certain training method and therefore the connection between a trainer and training method is researched through cross tabulation, which enables examining interdependencies between variables (Saunders, 2009, 439). The results show that trainer number 1 has used only training method 3, both live and skype training whereas trainer number 6 has used only skype training, which would cause errors in regression analysis due to perfect multicollinearity between these variables. (Stock & Watson, 2012). Multicollinearity makes it difficult to determine separate effects of individual variables and therefore only influence of the trainer will be included in the regression analysis and training method excluded from analysis (Saunders, 2009, 463). (Table 7.)

	<b>Training method 1</b>	<b>Training method 2</b>	<b>Training method 3</b>
<b>Trainer 1</b>	0	0	4
<b>Trainer 2</b>	2	0	3
<b>Trainer 3</b>	5	0	1
<b>Trainer 4</b>	2	2	0
<b>Trainer 5</b>	5	0	1
<b>Trainer 6</b>	0	3	0

*Table 7 Interdependency between trainer and training method*

Variables related to support from management, sales and colleagues might be influenced by organizational culture, which would explain and connect all three variables. Therefore correlation between the three variables is tested. Based on the correlation matrix it can be stated that there is significant linear relationship between support from management, sales and colleagues. Therefore these three variables can be combined to one variable called “supportOK” in order to decrease the number of variables. When all three support variables have value 1 also supportOK has value 1. (Table 8.)

	<b>SupportM</b>	<b>supportS</b>	<b>SupportC</b>
<b>SupportM</b>	1.000	0.673	0.677
<b>SupportS</b>	0.673	1.000	0.278
<b>SupportC</b>	0.677	0.278	1.000

*Table 8 Correlation between support variables*

Variables related to different kind of challenges faced by the respondents might also be interlinked and therefore correlation between them is also tested. According to correlation matrix all other variables except technical challenges with tools have strong correlation. Therefore all other challenges are grouped into one variable, except for technical challenges with tools. (Table 9.)

	<b>CRMdata</b>	<b>TimeMan</b>	<b>ComProb</b>	<b>Tasks</b>	<b>Tech</b>
<b>CRMdata</b>	1.000	0.457	0.417	0.280	-0.217
<b>TimeMan</b>	0.457	1.000	0.494	0.593	-0.236
<b>ComProb</b>	0.417	0.494	1.000	0.524	-0.666
<b>Tasks</b>	0.280	0.593	0.524	1.000	-0.284
<b>Tech</b>	-0.217	-0.236	-0.666	-0.284	1.000

*Table 9 Correlation between challenge variables*

As time spent in conducting forecast and contacting sales should not influence how well the process is learnt in theory, they are excluded from this regression analysis, but analysed later when the factors related to development of forecast accuracy is tested. Even though it would have been interesting to analyse whether those respondents who are trained with native language score higher in theoretical exam than the ones trained with foreign language, the sample size and low quantity of cases where native language was used in training prevent the analysis, and therefore training language variable is excluded from the research. After combining aforementioned variables related to support and challenges, independent variables to be tested are the following: trainer, perception of respondents on amount of training, analyzing data in customer relationship management system, supportOK, challenges and technical challenges with tools.

The first linear regression analysis including aforementioned factors explains the variance in scores of theoretical exam with low accuracy and factors perception of respondents on amount of training, analysing data in customer relationship management system and technical challenges with tools are proven not to be statistically significant. Therefore the final model includes independent variables trainer, supportOK and challenges. (Table 10.)

	Coef	SE	T-Value	P-Value
Intercept	6.7641	1.7851	3.789	0.001
Trainer 2	-0.8501	1.6907	-0.503	0.621
Trainer 3	-7.1403	1.4007	-5.098	0.000
Trainer 4	-7.1963	1.4857	-4.844	0.000
Trainer 5	-3.2358	1.3661	-2.369	0.028
Trainer 6	-7.7262	1.5764	-4.901	0.000
SupportOK	5.8710	1.8558	3.164	0.005
Challenges	0.5142	1.1890	2.721	0.013

Residual standard error	2.041
Multiple R-Squared	0.811
Adjusted R-Squared	0.7449
F-Statistics	7 and 20 DF
P-Value	5.15e-06

Table 10 Linear regression analysis 1

The model explains the variance in scores of theoretical exam with over 80% accuracy, as the R-squared is 0,811. The adjusted R-squared is 0,7449, which is relatively high. It is generally defined that the model can be considered statistically significant if P-value is 0,05 or lower and as the p-value of this model is 0,0000015 it is statistically significant. The residual standard error is 2.041, which means that score of the exam could be predicted with four points accuracy +/-2. (Table 10.)

The zero point in the model is 6,76 which means that predicted score in theoretical exam is 6,76 when the respondent is trained by trainer number 1, he or she faces the most severe challenges with lack of data in customer relationship management

system, communication with sales, time management and not knowing the tasks, and he or she is not supported by management, sales or colleagues. The influence of a trainer on score of theoretical exam is statistically significant, except for trainer 2 whose negative influence on the score is not statistically significant, as p-value is 0,62058. Trainer number 1 is the best trainer and if respondent is trained by another trainer the score is significantly lower. The variable supportOK also has significant influence on the score as if the respondent is supported by all three, management, sales and colleagues, the score is almost 6 grades higher than the scores of respondents who are not supported. The challenges faced also influence the score of the theoretical exam as if even one of the challenges becomes less severe with one scale, the grade of the exam improves 0,5 points.

Based on the results of the statistical analysis, it can be stated that trainer can either be considered a success or failure factor influencing the learning of reengineered business process. The reasons behind success or failure in training are not found out in this research but remain a topic for further research. Support from management, other departments related to the reengineered process and colleagues are proven to be success factors in learning the process, whereas challenges with communication, time management, knowing the tasks or other employees related to the process not handling their responsibilities can be classified as failure factors in learning the reengineered process.

#### **6.4.3 Factors Influencing Development of Forecast Accuracy**

Forecast accuracy is chosen as a way of measuring the success of implementation from a point of view of achieving the goals as it is the only quantifiable goal which can be observed within the time frame set for the research. When development of forecast accuracy is analysed the sample does not include data from business units in Finland, as the data on development of forecast accuracy has not been reported on business unit level in Finland and therefore it is not available.

At first correlation between the score on theoretical exam and development of forecast accuracy is tested in order to find out if knowing the process in theory leads to

positive development of forecast accuracy. The correlation between the score on theoretical exam and development of forecast accuracy is 0,37 and it is not statistically significant as the p-value is 0.07, which however is rather close to 0,05. Based on the results, it cannot be stated that there would be statistically significant connection between score on theoretical exam and development of forecast accuracy. The weak correlation can also be illustrated through a scatter plot, which enables exploring possible relationship between variables by plotting one variable against another. As the strength of the relationship is indicated by the closeness of the points to an imaginary straight line, it can be stated that the relationship between score of the theoretical exam and development of forecast accuracy is not strong. (Saunders, 2009, 441-442). Therefore the development of forecast accuracy is mainly influenced by other factors than how well the process is learnt in theory. (chart 18.)

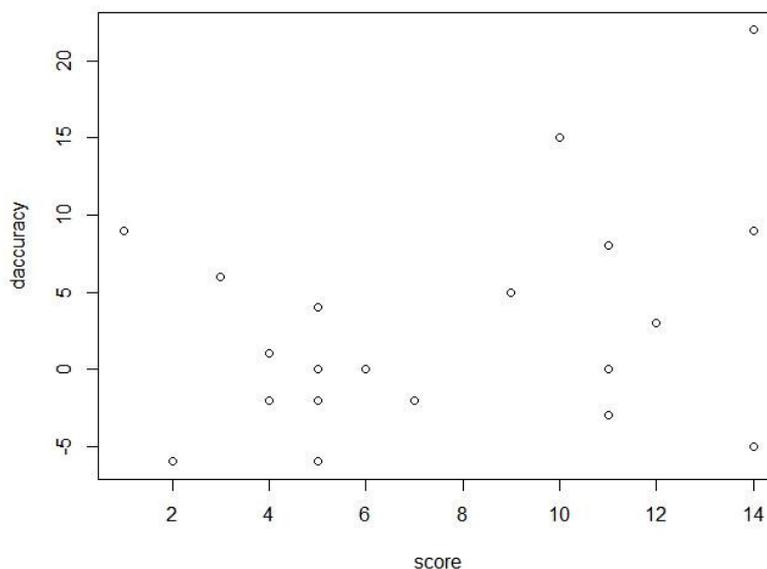


Chart 18 Correlation between score of theoretical exam and development of forecast accuracy

The influence of other independent variables; trainer, perception of respondents on amount of training, analysing CRM data, contacting sales, time spent in conducting forecast, combined challenges, combined supportOK and technical challenges on dependent variable; development of forecast accuracy is tested through linear regression analysis. Training method is excluded due to multicollinearity with variable

trainer. Perception of respondents on amount of training, analysing CRM data, contacting sales, time spent in conducting forecast and supportOK are proven not to have statistically significant connection to development of forecast accuracy and they are removed from analysis to improve the quality of the model.

	Coef	SE	T-Value	P-Value
Intercept	20.5813	8.2175	2.505	0.0227
Trainer 3	-13.4975	4.4991	-3.000	0.0081
Trainer 4	-8.2547	4.6608	-1.771	0.0945
Trainer 5	-11.6025	3.6019	-3.221	0.0050
Trainer 6	-10.8812	4.6490	-2.341	0.0317
Challenges	-0.6735	0.5111	-1.318	0.2051
Tech	-1.4468	1.2739	-1.137	0.2715
Residual standard error	5.503			
Multiple R-Squared	0.493			
Adjusted R-Squared	0.314			
F-Statistics	2.755 on 6 and 17 DF			
P-Value	0.04665			

Table 11 Linear regression analysis 2

Based on the results it can be stated that only trainer has statistically significant connection to development of forecast accuracy, as the P-value of trainers 2, 3, 5 and 6 is smaller than 0,05. Other variables do not indicate statistical significance as their P-value is higher than 0,05. (Table 11)

According to Multiple R-Squared the model explains less than 50% of the variance in development of forecast accuracy and adjusted R-squared is only 31%, even though the P-value of the model is 0.047, which indicates that it is statistically significant. According to Saunders (2009, 450) it is challenging to obtain significant test statistic with a small sample, which might be the case here as the business units in Finland are excluded from the sample decreasing its size 33%.

Even though the results of pilot phase indicate that contacting sales proactively, analyzing the data in customer relationship management system and putting effort and especially time in conducting the forecast would enable better results, the statistical analysis does not support that hypothesis. Even though the open feedback given indicates that challenges with lack of data in customer relationship management system, lack of communication with sales, time management, technical challenges with customer relationship management system and not knowing the tasks cause challenges in executing the forecast according to reengineered process, the challenges do not seem to influence the development of forecast accuracy.

A question arising and indicating the need for further research is whether the development of forecast accuracy should be analysed based on results of the first forecasting cycle. The results might change in longer time frame and therefore a topic of further research would be to analyse the factors influencing the development of forecast accuracy in longer time frame, which would generate more reliable results.

## **7 ANALYSIS**

The results of this research indicate that the success and failure factors can influence the implementation of reengineered sales and procurement planning process in four ways; prevent the implementation, influence learning the reengineered process, influence its execution and reaching the goals. In the following chapters success and failure factors related to each category are discussed more thoroughly accompanied with a chapter gathering all factors which were not proven as success or failure factors. Finally, the last analysis chapter consists of evaluation of the advantages and disadvantages of implementing reengineered sales and procurement planning process before the supporting IT infrastructure is developed in order to react to external pressures faster.

### **7.1 Factors Preventing Implementation**

The case study reveals that it is possible that certain factors prevent implementation of reengineered sales and procurement planning process completely in parts of the

organization. In this research the failure in implementing the process in certain business units was caused by a combination of several factors instead of a single failure factor.

Organizational factors caused failure in implementation in several business units due to multiple simultaneous resignations and long sick leave of a key person in the organization. Several simultaneous changes in personnel and absence of a key person forced the organization to focus on managing daily operations instead of implementing major changes. Therefore it can be stated that organizational structure which is dependent on a key person may risk the implementation of reengineered business process and be considered a failure factor. Another factor related to management competence, risk management, might have enabled minimizing the effects of several simultaneous resignations and sick leave of a key person, if the organization had been prepared for unexpected changes beforehand through risk analysis. According to literature reviewed risk management and continuous risk assessment is required throughout the implementation due to radical changes which often lead to unanticipated problems or changes in resources and time required (Attaran, 2004 and Al-Mashari and Zairi, 1999).

In one of the business units several interlinked factors caused failure in implementation of reengineered sales and procurement planning process. However, the process was implemented after the time frame set. In practice the business unit management prevented the business unit buyers from accessing certain information systems, which are essential for performing their tasks according to the reengineered process. Therefore, even though the employees were trained for the process, they were unable to execute it due to strict control of the local management. According to literature reviewed implementing reengineered business process may be challenging if the culture within the organization is not ready for the change (Tennant and Wu, 2005). Therefore it can be stated that there was a failure in creating effective culture for organizational change during implementation, as the organization was not able to replace the existing values and beliefs which were no longer appropriate in reengineered environment with new values, management processes and communication styles, which would enable effective implementation (Al-Mashari

and Zairi, 1999) The stimulation of organizations receptiveness to change also failed, as showing the discrepancy between existing state and desired state did not lead to change readiness or desire to change. (Armeniakis and Harris, 2002, Sikdar and Payyazhi, 2014).

In addition to factors related to change management, the failure was caused by factors related to management competence and more precisely management commitment and support and failure to change the management culture to suit the goals of the company and reengineered business process. Attaran (2004) states that a fundamental source for difficulties is that process is reengineered while management style is not. Management needs to learn to organize work in a holistic, integrated ways and create environment where preoccupation with internal activities are replaced with a design focused on customers. (Attaran, 2004). In business unit where the implementation of reengineered sales and procurement planning process failed the management culture did not support empowerment of employees, whereas the reengineered business process encourage and require it. Due to management's inability to change, the employees were not able to perform their tasks, which makes it a failure factor in implementation of reengineered sales and procurement planning process.

In case company top management was committed to the reengineering, provided resources to execute the project and endorsed the idea of empowerment in order for the process to support the overall strategy of the company. However, that was not sufficient as Dennis et al. (2003) point out that it is vital for top management to involve the middle managers who are responsible for implementation of BPR in order to commit them to changes in the organization. Despite the commitment of top management, the local operational management failed to reengineer their management style, which prevented execution of reengineered business process. Therefore this research highlights that inability to align all levels of management may become a failure factor in implementation of reengineered sales and procurement planning process.

According to Grover et al. (1995) lack of adequate planning for resistance to change and not realizing the need for change management may lead to failure in implementing reengineered process. Even though the need for change management was realized in case company, the possibility of such concrete actions to express the resistance to change were not expected, which enabled the failure in implementation of reengineered business process.

## **7.2 Factors Influencing Learning the Reengineered Sales and Procurement Planning Process in Theory**

The theory exam reveals that the reengineered sales and procurement planning process is not completely clear to all respondents as the average score of the exam is 7,6 out of 15 points. On general level the roles within the process are clear to respondents, even though according to open feedback there are unclarities of tasks and responsibilities of certain new jobs, which were created for the process. The knowledge on the process in theory is limited when it comes to differences between the old and reengineered processes, even though the differences are significant. Slightly worrying result is that clearly less than half of the respondents see the connection between the reengineered process and its goals; improved product availability, faster deliveries of new projects to customers, improved customer satisfaction and improved cooperation with other departments. The time frames for planning are also unclear to some respondents, which is also concerning as they are essential for achieving the goals and reengineering the planning process.

Despite relatively low average score on the exam, there are business units in which the score is close to maximum, which indicates high level of understanding on the reengineered process. Therefore the exam reveals the inequality in knowledge between business units, which provides opportunity to analyse factors influencing the level of learning the reengineered business process in theory. In following chapters the factors influencing the knowledge on the process in theory are discussed.

### **7.2.1 Factors Related to Change Management**

Change management related factors influencing how well the process is learnt are communication and training and education.

#### ***Factors Related to Communication***

Even though majority of the respondents consider that communication during implementation has been sufficient and they have received enough information, the results of the research indicate that there are certain areas where the communication has either not been sufficient or clear enough. Communication has not been sufficient in educating the vision and goals of reengineering the sales and procurement planning process to employees. Even though the BPR team has designed the process in a way that its goals support the overall strategy of the company, respondents were not able to see the connection, which indicates that the communication related to goals has not been sufficient. Interdepartmental communication is also a factor influencing how well the reengineered process is learnt, as according to the statistical analysis respondents who faced severe challenges with communication with sales scored lower on theoretical exam than the ones who had less severe challenges. This supports the statement in literature reviewed in which the importance of interdepartmental communication is emphasized in addition to communication between those in charge of the change and the ones influenced by it (Ranganathana and Dhaliwal, 2001). Based on the research, it can be stated that insufficient interdepartmental communication and communication between BPR team and employees can become failure factors in learning the reengineered process. On the other hand if interdepartmental communication can be established and communication between BPR team and employees is well managed, they can be considered success factors in learning the reengineered process.

Communication can also be considered a tool which finalizes other factors in BPR as this research reveals that creating a BPR vision and aligning the BPR strategy with corporate strategy is not enough, they should also be effectively communicated

to stakeholders. The challenge with communication is clearly that the receivers are not able to estimate if they have received enough information, so the BPR team needs to be very precise in their communications plan to cover all areas influenced by the business process reengineering. The results support the literature reviewed, which suggests that the communication plan should be comprehensive (Attaran, 2000).

### ***Factors rRelated to Training and Education***

According to statistical analysis there is a strong correlation between trainer and score of the theoretical test, which indicates that trainer is a factor influencing how well the reengineered process is learnt. Therefore trainer can be considered one of the most important success or failure factors in learning the reengineered process, depending on how good the trainer is. There are multiple different aspects related to the trainer which might explain the differences, such as style of teaching, personality, efforts put in planning the training and duration of training sessions for instance, but in this research different aspects of the trainer are not researched in more detail to provide thorough analysis. However, as there are clear variance between scores of trainees of each trainer, a question arises whether the quality of training should be monitored and evaluated more carefully throughout the implementation, not just at the beginning of trainings. In literature it is considered vital to monitor and evaluate the training throughout the process in order to assure focus on the topic (Attaran, 2000). Due to geographically scattered business units monitoring of all trainings would require additional resources and would also change the idea of using local trainers. Monitoring the trainers might also be interpreted as a sign of lack of trust, which would not support the company strategy that emphasizes empowerment. According to Sikdar and Payyaazhi (2014) empowerment promotes self management and Hinterhuber (1995) states that empowerment encourages employees to be more responsible and accountable, which was trusted also in case company when the training plan was created.

In statistical analysis training method was not analysed alone as a factor influencing the learning, as some trainers have used same training method throughout the trainings, which would cause problems in statistical analysis due to multicollinearity, and therefore trainer and training method factors have been combined. However, based on the questionnaire live training is the most preferred training method, but additionally it would need for instance e-learning assignments to support. More than half of the respondents considered the amount of training either sufficient or perfect, but the scores of theoretical test did not correlate with the evaluations of the respondents on the amount of training provided. In open feedback several respondents have communicated their insecurities about the reengineered process based on the amount of training provided, but it is not statistically proven that the respondents considering the amount of training insufficient would have scored lower than other respondents and vice versa.

Some respondents would have liked to have a recap session after implementation to guarantee their knowledge on the process. Not providing specifically scheduled recap session and trusting that business unit buyers will ask if anything is unclear has caused insecurity among some of the respondents. On one hand empowerment emphasizes trusting proactivity of employees, but on the other hand some of the employees might need more encouragement and support than others. Insecurities of employees and scores of theoretical exam indicate that the training of employees should not be stopped immediately after the reengineered process has been implemented, as opposed to implementation plan in case company. It would be important to continue trainings in form of recap sessions, where questions can be asked and possible problems brought up. This would require additional resources for training, but on the other hand could provide company with valuable feedback and ideas for further development from operational point of view.

The learning of employees should also be supported by providing clear and comprehensive instructions, including step by step process chart and clear instructions on responsibilities. In this research the opinions of respondents on instructions provided were relatively scattered, but according to open feedback improvements should be made in terms of process steps and clarity. In general the results of this

research support the results of previous researches in terms of emphasizing the importance of factors related to training and education.

### **7.2.2 Factors Related to Management Competence**

In statistical analysis support from management, sales and colleagues were combined as one factor, so management support alone cannot be analysed as a success or failure factor influencing learning the reengineered process. However, based on the statistical analysis, support in general is a factor influencing how well the process is learnt in theory as respondents who considered being supported during the implementation scored higher in theory exam than the ones who considered not to be supported.

According to the open feedback given, some operational level managers showed more support to subordinates than others by arranging them time to focus on learning the new tasks related to the process through allocating daily tasks differently at the beginning of implementation. If management support is shown to employees influenced by the reengineering in this way, it might enable learning the process more efficiently. Some managers also showed interest and enthusiasm towards the new tasks of business unit buyers by encouraging them for new responsibilities and following the progress and results. This might help in motivating employees to learn the process and improve their skills as their work is considered valuable by management.

### **7.2.3 Factors Related to Organizational Structure**

#### ***Creating new Jobs and Responsibilities***

According to both statistical analysis and open feedback there are two factors related to creating new jobs and responsibilities which can be considered failure factors in learning the reengineered process. Respondents who faced severe challenges with time management scored lower in theory exam than the ones who either faced less severe challenges or no challenges at all. Based on the open feedback received challenges with time management can be caused by two factors; the job

description of new business unit buyers in Finland was not clearly enough defined or communicated to business unit level, which led to difficulties in setting boundaries to responsibilities and therefore also time management. Another reason for challenges with time management is slowness of the process due to manual work required during development phase of supporting IT infrastructure, which was commented by several respondents.

Another factor influencing learning the new process is challenges with knowing the tasks. For some of the respondents their tasks were still unclear after first round of forecasting according to reengineered process. In general, it can be stated that redefining responsibilities or creating new jobs may become failure factors in learning the reengineered process if job descriptions are not clearly defined or the amount of resources planned realistically when defining the responsibilities. Therefore the results support the statements of Al-Mashari and Zairi (1999) that clear job descriptions can be considered a success factor and Grover et al., (1995) that unclear job descriptions may become failure factors in implementation of reengineered business process.

### ***Assigning Effective BPR Team***

Based on the literature reviewed an employee who is able to oversee the process from top to bottom should lead BPR and the team should consist of first-rate people from all relevant departments, preferably from both inside and outside the process (Attaran, 2000). According to Al-Mashari and Zairi (1999) the effectiveness of the BPR team is determined by their competency, credibility within the organization, effective team leadership, empowerment within the team, clarity of work approach and specificity of goals. However, the results of the research indicate that even if an effective BPR team was assigned they could still struggle with monitoring the implementation of reengineered process. In case company the BPR team met all the criteria set for an efficient BPR team in literature reviewed, but still they were not able to fully monitor and control the implementation throughout the organization in terms of trainings and how well the process is learnt. It is very likely that geographically

scattered business units and emphasis on empowerment create a challenging setting to monitor and control the trainings, which has led to differences between trainers and possibly also in the way trainings were conducted as there was significant variance in scores of theory exam. Therefore the results of the research disagree with the literature reviewed on some level, as effective BPR team alone cannot be considered a success factor, even though it enabled implementing the process in majority of the business units.

### **7.3 Factors Influencing Execution of Reengineered Sales and Procurement Planning Process**

In the following chapters success and failure factors influencing execution of reengineered sales and procurement planning in practice are analysed.

#### **7.3.1 Factors Related to Change Management**

Revising motivation and reward system, communication, empowerment and human involvement, training and education and creating effective culture for organizational change are the factors discussed in following chapters related to change management.

##### ***Revising Motivation and Reward System***

Case company did not revise their motivation and reward system when implementing the reengineered sales and procurement planning process, but a question arises whether it would have helped in avoiding some of the challenges faced. Several authors (Al-Mashari and Zairi, 1999, Grover et al., 1995, Sikdar and Payyazhi, 2014) have identified reward system as an effective motivator for change among employees when new responsibilities are introduced. One of the biggest challenges in executing the reengineered process was lack of sales cases in customer relationship management system as sales department had not added the information in the system for business unit buyers to use in conducting forecasts. As sales department has an existing reward system, one idea would be to connect the rewards to how

accurately they can plan their sales cases within the time frame set and share the information in customer relationship management system. It might encourage sales to plan their sales cases more actively also in longer time frame and add the necessary information into the system to enable visibility to the sales pipeline.

### ***Communication***

Factors related to communication influenced the execution of the process in two ways. One of the challenges faced during implementation was lack of communication between sales and procurement. Without communication, there was no way of filling in gaps left by the lack of data on sales cases in customer relationship management system. If communication was not established between the departments and the system was lacking data on sales cases, business unit buyers had no visibility to sales pipeline and they were not able to conduct forecast according to the process. According to the questionnaire several business units faced either severe challenges or challenges which prevented conducting the forecast according to the process due to lack of communication with sales. These results confirm that interdepartmental communication can be considered success factor in implementation of reengineered process, whereas failure in establishing it can be considered a failure factor, which supports the statement in literature reviewed.

However, a question arises whether other factors could have been used to facilitate communication between sales and procurement. According to Attaran (2000) training should also include teaching other skills than the ones directly related to the process, such as problem solving, communication, teamwork and customer orientation. Therefore one option could have been to emphasize co-operation and communication more in training sessions. Attaran (2000) also states that individuals are often working in isolated departments before BPR whereas in process-based organization the infrastructure should be replaced with cross-functional teams. Therefore the organizational structure must be altered to facilitate cooperation and communication between departments and eliminate cross-functional barriers (Attaran, 2000). Based on research of Attaran, changing the organizational structure might also facilitate interdepartmental communication.

Another way in which communication influenced execution of the reengineered sales and procurement planning process was lack of communication on the responsibilities of new jobs formalized, which led to unawareness of tasks, challenges in scheduling work and setting limits to responsibilities of certain employees. Due to unawareness of the job description in detail some employees were not aware of which tasks should be prioritized when the workload increased. Only one of the respondents considered the challenges caused by not knowing his or her tasks so severe that it prevented conducting the forecast according to the reengineered process, but it can be stated that not communicating the content of new jobs established through reengineered business process may become a failure factor by preventing employees from fully focusing on value adding activities.

### ***Empowerment and Human Involvement***

According Jackson (1997) employees at different positions in the organization should be actively involved and consulted during BPR. In general no major problems or pitfalls related to the process emerged during implementation and therefore it can be stated that involving employees in developing the process has been beneficial for the company in terms of receiving feedback from operational point of view and can therefore be considered a success factor.

According to Armenakis and Harris (2002) involving employees may also work as a way of managing change, as change can be perceived as appropriate if stakeholders are engaged in problem solving which enhances their sense of control. In this research no clear indications could be seen that respondents participating in pilot phase would have perceived the change more positively than the ones not participating in development of the process during pilot. On the other hand no indications against it could be identified either.

### ***Training and Education***

If learning the process is considered separately, factors related to training and education can influence the execution of the process mainly through mental side of employees as if the amount of training is considered insufficient it is likely to cause

insecurity in performing the tasks, whereas providing continuous training may encourage employees in their responsibilities.

### ***Creating Effective Culture for Organizational Change***

According to open feedback received factors related to creating effective culture for organizational change influence implementation of reengineered process. Some of the employees did not adopt the new culture of cooperation between departments which led to lack of communication between sales and procurement influencing execution of the process especially in situation where data on sales cases had not been added in customer relationship management system. On the other hand, according to open feedback there were business units where the communication culture changed during the implementation and problems with lack of data were solved. This result proves that factors related to organizational culture may influence execution of reengineered business process in practice through behaviour of employees and therefore can either be a success or failure factor in implementation of reengineered process.

### **7.3.2 Factors Related to Management Competence**

Factors related to management support influenced the execution of the reengineered sales and procurement planning process in three ways; giving time to learn and perform the tasks, motivating for the new responsibilities and helping in pushing other employees related to the process to perform their tasks. According to open feedback received in some business units management realized that learning new responsibilities is time consuming and therefore reorganized some of the tasks temporarily so that business unit buyers could focus more on performing the new tasks. They also showed exceptional interest in the new responsibilities of business unit buyers, which motivated them to do their best and put their efforts into succeeding in their tasks. One of the biggest problems in implementation of reengineered sales and procurement planning process was missing data on sales cases in customer relationship management system. For some of the business units this became a

severe problem which prevented conducting the forecast according to the reengineered process, whereas others mentioned that they had been supported by management of sales department who brought up the issues in sales department and monitored that sales personnel would add their sales cases into the system. This indicates that management support in all activities related to the process is crucial success factor in implementation of the reengineered business process. On the other hand also lack of monitoring from management side may cause failure in execution of the process if some employees do not perform their tasks and therefore prevent others from performing theirs.

### **7.3.3 Factors Related to Organizational Structure**

Factors related to organizational structure influencing the execution of the reengineered business process became clear when unplanned organizational changes occurred simultaneously with implementation. If there are changes in personnel during implementation or soon after it, the execution of the process may be jeopardized in that business unit if the leaving employee does not train the new employee to follow the reengineered process. Therefore unexpected organizational changes should be prepared for with a back up plan in case training is not handled properly in certain business unit. One way would be to guarantee access to detailed instructions which enable performing the tasks even without training or alternatively request BPR team to arrange for instance Skype training to guarantee knowledge on the process. Based on the results it could be stated that factors related to organizational structure require planning and risk management or otherwise they can become failure factors in executing the reengineered process.

#### ***Formalizing new Jobs and Responsibilities***

The way in which new jobs were formalized during the research influenced the execution of the process in two ways. New job descriptions were created in business units in Finland, but the content of the job, the tasks and responsibilities were either not clearly defined or communicated to business unit level which caused confusion in employees and even prevented some of the respondents from conducting the

forecast according to the reengineered process. According to Al-Mashari and Zairi (1999), as new jobs and responsibilities are resulted from BPR, the importance of creating a formal and clear job descriptions of all jobs and responsibilities should be emphasized in order to succeed in implementation and encourage employees to perform the tasks efficiently. Unclarities also caused difficulties in planning the resources as there were no clear limitations to tasks of a business unit buyer or guidelines which tasks to prioritize. Due to unclarity of responsibilities and challenges with resources, time management also became a challenge for employees, which naturally influenced handling the tasks related to the process.

#### **7.4 Factors Influencing Achieving the Goals**

Success and failure factors may also influence achieving the goals of reengineering the process. The results which could be seen within the time frame set for the research are establishing group level operating model, increasing visibility to the sales pipeline and first indications of development of forecast accuracy.

Establishing group level operating model was accomplished in all business units where the reengineered sales and procurement planning process was implemented and it was enabled by all success factors together instead of a single success factor. On the other hand, according to results of this research there were also failure factors preventing the implementation and therefore they also influenced achieving the goals.

Increasing the visibility to the sales pipeline was not completely achieved as the amount of data inserted into the customer relationship management system is still not sufficient and provide full visibility in longer time frame. The success and failure factors influencing achieving this goal relate mostly to change management as it would require major changes in mindset and working methods of sales and interdepartmental communication to achieve the goal. Also factors related to management competence and especially management commitment and support influence on achieving this goal as management should put pressure on sales in order to support the change.

In this research development of forecast accuracy was chosen as quantifiable goal to be researched as achieving other goals cannot be analysed within time frame of the research. According to statistical analysis only influence of trainer on development of forecast accuracy is statistically significant. Therefore it can be stated that trainer can either be a success or failure factor when achieving the goals are considered.

With other factors the influence is not statistically significant, but as the data on development of forecast accuracy is collected from a short period of time and small sample size may complicate the statistical analysis, a possibility of reliability issues needs to be considered. Therefore topic could be researched further in longer time frame in future research.

## **7.5 Factors not Proven to be Success or Failure Factors**

All success and failure factors identified in literature reviewed were not proven to be success or failure factors in this research due to inability to test them in the case study setting or negative results gained through testing.

### **7.5.1 Factors Related to Change Management**

Factors related to change management, which were not proven to be either success or failure factors are revision of motivation and rewards system and language used in training of employees.

#### ***Revision of Motivation and Rewards System***

The influence of revision of motivation and rewards system was not tested in this research as the case company did not revise its motivation and rewards system due to reengineering the process, but the analysis chapter includes a question, whether it should have in order to motivate employees and ensure the change in mindset and working methods.

### ***Training and Education***

The aim was to analyse whether training in native language helps in learning the reengineered process better than if the employees are trained with foreign language, but unfortunately the construction of sample prevented the analysis and therefore training language remains a topic for further research

### **7.5.2 Factors Related to Organizational Structure**

Factors related to organizational structure which were not proven to be either success or failure factor was assigning effective BPR team. The inability to identify it as a success factor is caused by observation that even the most efficient BPR team might have challenges in overseeing the progress if the setting for implementation is challenging.

### **7.5.3 Factors Related to BPR Project Management**

Factors related to BPR project management are building BPR vision, aligning BPR strategy with corporate strategy, effective use of consultants and setting performance measures and goals.

### ***Building BPR Vision and Aligning BPR Strategy with Corporate Strategy***

According to researchers the vision of future processes needs to be clear and compelling in order to succeed in implementation of BPR, as the vision directs both long term and daily actions within the company (Jackson, 1997, Al-Mashari and Zairi, 1999). Jackson (1997) also states that considering the overall strategic context of growth and expansion and aligning the BPR strategy with the corporate strategy is crucial to the success of BPR efforts. In scores of the theoretical exam of the reengineered process it became clear that only part of the respondents can connect the reengineered business process with its goals, even though the goals support the overall goals of the company strategy. Therefore it can be stated that even though the BPR project management team had succeeded in creating a BPR vision and

aligning the BPR strategy with corporate strategy, it is not guaranteed to be understood by the employees. Considering the execution of the process however, it is not proven to be a failure factor that employees are not able to connect the company strategy and its goals with reengineered sales and procurement planning process as process was implemented despite respondent's inability to connect it with its goals or corporate strategy.

### ***Effective use of Consultants***

According to Klein (1994), in some cases effective use of consultants may enable successful implementation of BPR due to specialized skills which management or employees of a company may lack, know-how on organizational needs and experience in BPR. Al-Mashari and Zairi (1999) also emphasize the neutrality of consultants which helps in encouraging unity between members of the organization. Effective use of consultants was not tested in this research as consultants were not used in implementation stage. Therefore their influence on implementation remains a topic for further research.

### ***Setting Performance Measures and Goals***

According to Al-Mashari and Zairi (1999) the project team should set clear goals for BPR and monitor the progress continually throughout the BPR implementation. Appropriate performance measures should also be identified as they indicate the level of achieving the goals. (Zairi and Sinclair, 1995). According to Grover et al. (1995), difficulty in establishing performance goals and not assessing the BPR project performance from early stages on may lead to failure in implementation. Setting performance measures and goals was not proven to be a success factor in implementation of reengineered process or lack of setting them a failure factor, as case company had not communicated any specific goals measuring the success to employees but it did not cause implementation to fail. However, a question arises whether setting performance measures for business units would motivate the employees to learn the process better and do their best when performing their tasks.

#### **7.5.4 Factors Related to IT Infrastructure**

##### ***Evaluating Requirements for IT infrastructure***

According to Attaran (2004), succeeding in BPR is possible only if companies focus first on the business processes which influence the competitive factors such as customer service, cost, quality and time-to-market, and evaluate the requirements for IT infrastructure development based on employees' needs. In case company the requirements for IT infrastructure are well evaluated for the actual solution as it is developed at the same time with implementation of the process, but too much resources is not put in developing the temporary tools as the aim is to use them maximum a year. According to Al-Mashari and Zairi (1999) timing may become an issue if the company either fails to deliver the IT systems on time or if the development process is rushed leading to poor results. Not rushing in developing process of supporting IT infrastructure influences the execution of the reengineered sales and procurement planning process as using temporary tools requires significant amount of manual work in order to support the process, which slows down conducting the forecast. Some of the business units also faced problems with using the temporary Excel files as their connections were not good enough to upload data from excel files to certain platforms, which increased frustration of employees. Despite the discomfort caused and time required for conducting the forecast, temporary tools cannot be considered a complete failure factor in terms of evaluating requirements for IT infrastructure development.

##### ***Creating Integrative IT infrastructure***

In creating effective IT infrastructure it is essential to integrate various information systems throughout the organization in order to share complete, consistent, accurate and timely information among business units and different processes (Jackson, 1997). The temporary tools provided in case company do not have integration to other IT systems, which causes the need for manual work. Due to manual work the risk of mistakes increases and the data inserted might not be completely accurate, which influences the forecast accuracy.

Based on the results of the research using temporary tools may influence the execution of the reengineered business process negatively and cause frustration among employees, but there is no indication that lack of intergration between IT systems would be complete failure factor. According to statistical analysis, challenges with IT tools were the only challenges not influencing the score of theoretical exam.

#### **7.5.5 Factors Identified During Pilot**

During pilot phase those business unit buyers who proactively contacted sales, put a lot of effort and time in creating the forecast and analysed the data used in forecasting seemed to learn the process faster than those who only conducted the tasks mentioned in instructions. Therefore proactivity of respondents and its influence on learning was tested by comparing three variables; analyzing data in CRM, contacting sales and amount of time spent in forecasting with the score of the theory exam. Based on the results, there is no correlation between proactivity and score of the exam, at least when these particular activities are concerned and therefore proactivity of employees cannot be considered a success factor in learning the reengineered process.

#### **7.6 Advantages and Disadvantages of Implementing Incomplete Process**

The results of the research indicate two folded outcomes when it comes to implementing reengineered business process which is incomplete as the supporting IT infrastructure is still in development phase. On one hand the advantages support the idea that reengineered processes are implemented as quickly as possible as adoption of the process inevitably takes time, but some results could still be achieved. On the other hand, if the reengineered process is not complete yet and changes requiring retraining of employees are expected, company should be prepared for extra costs, resource needs and long time frame change management plan.

The outcome of implementation indicates some disadvantages if processes are implemented before the supporting IT infrastructure is ready. First of all conducting forecasts with temporary Excel tools without integration to other IT systems takes long time and causes inefficiency in operations within the organization. Temporary tools require a lot of manual work due to lack of integration between existing systems and temporary tools, which also increases risks of mistakes in addition to time consumed. Lack of integration and proper tools may also cause unreliability of data, which could lead to less credible forecasts.

When the supporting IT infrastructure is fully designed it needs to be implemented throughout the organization separately, which requires retraining of employees. In some cases process modifications may also be needed due to limitations or possibilities provided by the IT system, which means that in addition to learning how to use a new IT system employees would need to unlearn the previously trained process and learn a new one. Training and possible changes in the process require resources and time, which need to be considered if company is planning on implementing a reengineered process before it is complete. For employees several consequential changes may cause insecurity and anxiety, so change management and open communication on the progress and schedules is needed throughout the change process.

Despite the possible disadvantages caused by implementing reengineered business process when it is still incomplete, there are also evidence which support the idea of implementing the process as early as possible to react to external pressures faster. First of all implementing the process fast is a way of communicating the urgent need to change to employees. It may increase the understanding of employees on shortcomings of current way of working and stimulate the receptiveness of change as stated by Armenakis and Harris, (2002). The research also reveals that changing the way of working and especially the way of thinking requires time. Therefore it is important to start the change in people and in a way of thinking, even though the supporting IT infrastructure is not available.

Based on the scores of the theory exam it can be stated that it is possible for employees to understand the process even though the proper tools were not available, although for some employees it might be more challenging than for others for several reasons as the results indicate.

When it comes to achieving goals by implementing incomplete business process, only part of them can be evaluated in this research due to limited time frame. However, the development of forecast accuracy supports the idea of implementing the process even though the supporting IT infrastructure is not available as the forecast accuracy improved after the reengineered process was implemented when the results were analysed on group level. The forecast accuracy did not improve in all business units, so there was variance in development, but the overall results indicate that improvements can be made without the actual IT tools. Another goal which can be evaluated already during research was to increase visibility to the sales pipeline and establish communication between sales and procurement departments. According to the questionnaire communication between departments was achieved in some business units through proactive employees, but some business units faced severe challenges with communication between procurement and sales. There are still challenges with increasing the visibility to the sales pipeline as well, as sales has not adopted the way of working yet, which supports the statement that it takes time to change the way of working and starting the change as early as possible would enable faster reaction to external pressures through achieved goals.

In general some positive development and achieving goals could be seen after implementing the reengineered business process even though the supporting IT infrastructure is still in development phase. If company had postponed implementing the process until the supporting IT infrastructure was completely designed, the process would have been implemented more than a year later. With the current implementation plan case company was able to start the change within the organization and introduce the IT infrastructure afterwards when the change in ways of working and especially in ways of thinking had already begun. However, it still needs to be recognized that until the supporting IT infrastructure and proper tools are implemented, the process will require a lot of manual work taking a long time, increasing the risk

of mistakes and preventing efficiency in operations and even when the IT infrastructure is ready to be implemented company needs to retrain the employees, which requires resources and continuous change management.

## **8 CONCLUSION**

Aim of this research was to identify the success and failure factors in implementation of reengineered sales and procurement planning process and analyse how they influence the implementation. The aim was also to analyse the advantages and disadvantages of implementing the process when the supporting IT infrastructure is still being developed in order to react to external pressures faster.

The empirical part of the research was conducted as a case study for a company operating in textile service industry in 24 countries and both qualitative and quantitative data was collected through questionnaire and interview of the project manager and demand planner.

Before the empirical part of the research literature on business process reengineering and more precisely on success and failure factors in implementation of reengineered business process was reviewed in order to form a theoretical framework for the research and identify research gaps to be filled. The main research question of this study is: "What are the success and failure factors in implementation of reengineered sales and procurement planning process?" In order to provide more specific information and fill in a research gap on conducting the research from viewpoint of implementing incomplete business process, the following sub questions are created:

-How do success and failure factors influence implementation of reengineered sales and procurement planning process?

-What are the advantages and disadvantages of implementing incomplete sales and procurement planning process in order to react to external pressures faster?

## **8.1 Success and Failure Factors in Implementation of Reengineered Sales and Procurement Planning Process**

Through this research a variety of success and failure factors influencing implementation of reengineered sales and procurement planning process were identified. It also became clear that there are interdependencies between factors and therefore success or failure in implementation is rarely caused by a single factor. There were some discrepancies between literature reviewed and results of the research and some of the factors remain a topic for further research. Success and failure factors identified through this research can be classified based on the categories of theoretical framework.

### **8.1.1 Success Factors Identified**

The success factors identified related to change management are communication, training and education, human involvement, creating effective culture for organizational change and stimulating organization's receptiveness for change. Success factors related to management competence are management commitment and support, managing change at different levels and reengineering management style. Success factors related to BPR project management, are effective planning and adequate resources, and monitoring the progress.

### **8.1.2 Failure Factors Identified**

Failure factors identified during the research related to change management are insufficient communication, quality of training and education, excessive empowerment, inability to create effective culture for organizational change, failure to stimulate organization's receptiveness to change and lack of adequate planning for resistance to change. Failure factors related to management competence are failure in management commitment and support, inability to reengineer management style, inability to manage change at different levels and failure in risk management. Failure factors related to organizational structure are organizational structure in general and formalizing new jobs and responsibilities.

### **8.1.3 Factors not Proven to be Success or Failure Factors**

Based on the research it can be stated that there are factors, which are clearly neither success nor failure factors. They can influence the implementation on some level, but during the research the influence was insufficient for classification of success or failure factor. Factor related to organizational structure is assigning effective BPR team. Factors related to BPR project management are setting clear performance measures and goals, creating a BPR vision and aligning BPR strategy with corporate strategy. Factors related to IT infrastructure are evaluating the requirements for IT infrastructure and integrative IT infrastructure.

## **8.2 Influences of Success and Failure Factors in Implementation of Reengineered Sales and Procurement Planning Process**

According to results of the research success and failure factors can influence implementation of reengineered sales and procurement planning process in four ways; they can prevent the implementation completely, influence how well the reengineered process is learnt, influence its execution and achieving the goals.

### **8.2.1 Factors Preventing Implementation**

In case study the implementation of reengineered sales and procurement planning process was prevented by combination of several failure factors instead of a single failure factor. In majority of the business units in which the implementation failed the failure was caused by factors related to organizational structure due to several simultaneous resignations and sick leave of a key person in the organization, which forced the business units to focus on daily activities instead of implementing changes in processes. The dependency of the organization on key persons and lack of risk management in case of several simultaneous resignations prevented the implementation of reengineered sales and procurement planning process.

In one of the business units the failure was caused by factors related to change management and management competence, as the business unit management denied access of business unit buyers to certain reporting systems, which were essential for generating the forecast according to the process. Therefore, the failure factors related to management competence were lack of management commitment and support as the business unit management did not support the reengineered process and change, inability to reengineer management style to support the process and failure to manage the change in all levels as the business unit management culture was not in line with the top management. Failure factors related to change management were inability to create effective culture for organizational change as the management was not able to change the way of working and thinking, failure in stimulating organization's receptiveness to change as resistance to change became so strong that it led to concrete actions to prevent the implementation, and lack of adequate planning for resistance to change as company was not prepared for such challenges in implementation.

### **8.2.2 Factors Influencing Learning the Process**

Success and failure factors can also influence how well the reengineered process is learnt. The most significant factor influencing how well the process is learnt relates to change management and more precisely on training and education, as trainer can either be a success factor or failure factor when training the employees. According to statistical analysis trainer was a factor with the strongest influence on how well the process was learnt and the differences between results were significant. Even though empowerment is generally considered a success factor according to literature reviewed, the results of the research arose a question whether excessive empowerment can lead to inability to control the quality of training and therefore decrease the level of learning. Therefore, continuous monitoring and evaluation of training from BPR team could be considered a success factor in terms of learning. Factors related to communication can also be either success or failure factors in terms of learning the process as insufficient communication on goals and BPR vision prevent employees from connecting the reengineered process with corporate strat-

egy and goals, whereas comprehensive communications plan can facilitate learning. According to results of statistical analysis interdepartmental communication can also be considered a success or failure factor, as respondents facing severe challenges with communication with sales scored lower in theoretical exam than the ones facing less severe challenges.

According to statistical analysis factors related to management competence and more precisely management commitment and support is a success factor enabling better learning of the process through motivating and providing opportunity to focus on learning new tasks, whereas lack of support from management can be considered a failure factor complicating the learning. Challenges with time management influence how well the process is learnt and in this case failure factors behind it are insufficient definition of responsibilities of new jobs formalized and temporary tools causing a lot of manual work. Therefore, success factor related to organizational structure and more specifically formalizing new jobs and responsibilities is defining clear job descriptions.

### **8.2.3 Factors Influencing Execution of the Process**

On practical level success and failure factors can influence the execution of the reengineered sales and procurement planning process. Considering change management and more precisely communication, failure in establishing interdepartmental communication may become a failure factor and prevent conducting the forecast according to reengineered process if data on sales cases has not been inserted into customer relationship management system, whereas establishing interdepartmental communication may become a success factor enabling solving the problem during planning cycle and increasing visibility to the sales pipeline. Establish interdepartmental communication requires succeeding in creating effective culture for organizational change as it enables changing the mindset of employees and therefore also ways of working. On the other hand, not being able to establish interdepartmental communication is a sign of failure in creating effective culture for organizational change, which can also be considered a failure factor preventing the execution of reengineered process, as people may continue working in silos. In addition

to interdepartmental communication, also communication between BPR team and employees can be considered a success factor when it is well managed as it can increase employees' knowledge on their tasks, but if communication related to responsibilities and tasks is not comprehensive, it may become a failure factor influencing the execution of the process as employees are not aware of their responsibilities.

Human involvement can be considered a success factor as involving the employees from operational level in developing the process and solving problems at early stage may help prevent identifying major issues in the process during implementation. Factors related to training and education can influence the execution of the process mainly through mental side of employees as if the amount of training is considered insufficient it is likely to cause insecurity in performing the tasks, whereas providing continuous training may encourage employees in their responsibilities. Organizational factors and more specifically formalizing new jobs and responsibilities have the risk of being failure factors if the job description is not clearly defined as unawareness of tasks and responsibilities can lead to difficulties in setting boundaries and managing resources, challenges with time management and anxiety of employees.

Factors related to management competence and especially management commitment and support is a success factor as it can encourage and motivate employee to perform the tasks related to the process, help in solving problems related to other departments and support changing the working methods. In order for the management commitment and support to show on operational level, the company must have succeeded in managing the change at different levels, which is a success factor enabling implementation through aligning the business unit managers to support the change and employees influenced by it. As the starting point and management style in each business unit varies, it is likely that management styles have been reengineered in business units where the implementation has been successful, which can therefore be considered a success factor.

#### **8.2.4 Factors Influencing Achieving the Goals**

Success and failure factors may also influence achieving the goals of reengineering the process. The results which could be seen within the time frame set for the research are establishing group level operating model, increasing visibility to the sales pipeline and first indications of development of forecast accuracy. Establishing group level operating model was accomplished in all business units where the reengineered sales and procurement planning process was implemented and it was enabled by all success factors together instead of a single success factor. On the other hand, all the failure factors prevented achieving the goals in the whole organization. Increasing the visibility to the sales pipeline was not completely achieved as the amount of data inserted into the customer relationship management system is still not sufficient and provide full visibility in longer time frame. The success and failure factors influencing achieving this goal relate mostly to change management as it would require major changes in mindset and working methods of sales and interdepartmental communication. Also factors related to management competence and especially management commitment and support influence on achieving this goal as management should put pressure on sales in order to support the change. According to statistical analysis only one of the tested factors influences development of forecast accuracy. The factor relates to change management and more precisely on training and education, as trainer influences the development of forecast accuracy. However, as the time frame of data collection is relative short and sample size small, the risk of reliability issues exists.

#### **8.3 Advantages and Disadvantages of Implementing Incomplete Sales and Procurement Planning Process**

The results of the research indicate two folded outcomes when it comes to implementing reengineered sales and procurement planning process before the supporting IT infrastructure is developed in order to react to external pressures faster. Using temporary tools causes disadvantages due to manual work required as it takes time and causes inefficiency in operations. Additionally the risk of errors in the forecast increases due to lack of integration between IT systems. When the IT infrastructure

is fully developed, the employees need retraining on the system and possible changes in the process, which requires unlearning the current process and adopting to the new one. Separate trainings require time, resources and investment, and several changes might require long term change management plan.

Despite the possible disadvantages caused by implementing reengineered business process when it is still incomplete, there are also evidence which support the idea of implementing the process as early as possible to react to external pressures faster. First of all implementing the process fast is a way of communicating the urgent need to change to employees as it may help to understand the shortcomings of current process. The research also reveals that changing the way of working and especially the way of thinking requires time and therefore it is important to start the change in people and in a way of thinking, even though the supporting IT infrastructure is not available.

When it comes to achieving goals by implementing incomplete business process, only part of them can be evaluated in this research due to limited time frame. However, the development of forecast accuracy supports the idea of implementing the process even though the supporting IT infrastructure is not available, as improvement in forecast accuracy could be seen on group level. Another goal which can be evaluated already during research is increase in visibility to the sales pipeline and establishing communication between sales and procurement departments. The goal was not completely reached during research but on the other hand it also indicates that changing the way of working and thinking takes time.

In general some positive development and achieving goals could be seen after implementing the reengineered sales and procurement planning process, even though the supporting IT infrastructure is still in development phase and as changing the way of working and especially the way of thinking is proven to be time consuming, earlier implementation has enabled the process to begin. However, as the supporting IT infrastructure will be developed at some point, company needs to be prepared for retraining and continuous change management.

## **8.4 Final Words**

As an outcome of the research the number of failure factors identified was higher than the number of success factors. However, it does not necessarily mean that more failure factors exist than success factors, but rather that cause of failure was easier to identify than cause of success. During the research it became clear that even though some of the factors were proven to be either success or failure factors in implementation of reengineered sales and procurement planning process, the failure or success is seldom caused by only one factor. There are interdependencies between factors, which means that in order for a factor to become a success or failure factor other factors are needed to support it. This supports the findings of Grover et al. (1995) implying that implementing reengineered process is a complex project involving a combination of factors which all influence the success or failure of implementation. Tennant and Wu (2005) agree that all these elements and factors should be considered together, as it is not possible to succeed in implementation by modifying just one of the factors without considering its influence on the others and overall result of implementation. Therefore it is not sufficient for a company to focus on the factors identified as success or failure factors, but implementation of reengineered process should be considered as a whole.

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## **APPENDICES**

### **Appendix 1. Questions at interview of the project manager**

1. What kind of country specific schedules have been planned for the implementation of the new sales and procurement planning process?
2. Can trainers define on their own how many training sessions will be arranged in each country or business unit, or has it been defined already in implementation plan?
3. Will the trainers share their plans on training methods with the project manager beforehand?
4. Have you encountered any challenges in the pilot phase which should be prepared for in the implementation phase?
5. Have you received any feedback, positive or constructive, during the pilot phase which would have made you change the process during or after the pilot?
6. Were business units involved in developing the process, not only testing it?
7. Did you encounter any doubts or negative attitudes among pilot units towards the new process?
8. What kind of KPI's have you used to measure the results during the pilot phase?
9. How have you defined that the new process has worked well?

10. How have business units been informed about the new process? Have they known about it long time before the implementation and what kind of channels have been used in communication?
11. Is there a possibility that the new sales and procurement planning process might change during the implementation because of the development of new management model for the company?
12. Are major changes required to the working methods of sales department as well?
13. Have you set a time limit when you expect to see the results of the implementation of the new process?
14. Have you set any specific targets of performance for the business units?

## Appendix 2. Questionnaire

### Background information

1. For which business unit or business units do you generate procurement and stock plan (forecast)? \*

2. Have you received enough information about the new sales and procurement planning process?

- Yes
- No

3. If not, what kind of additional information would you have needed?

4. Have you been given opportunity to ask questions about the new process and your role if necessary?

- Yes
- No

5. What kind of training methods have been used?

You can pick several options

- Skype/Videra
- Live training

6. How appropriate do you consider the training methods used?

- Didn't support my learning at all
- Rather appropriate, but something else would have been better
- Appropriate
- Very appropriate
- Perfect method to support my learning

7. What other kind of training methods would you have preferred?

You can pick several options

- Live training
- More training sessions
- Online course/eAcademy
- Session with opportunity to ask questions
- Skype/Videra
- Something else

8. Has the amount of training been sufficient for adopting your new tasks?

- Not sufficient at all
- Rather sufficient, but more would have been better
- Sufficient amount
- Perfect amount
- Too much

9. How good are the tools offered to perform your new tasks (CRM, new Excel planning tool)?

- Not sufficient at all
- Could be better
- Good enough
- Very good
- Excellent, I would not need any other tools

10. How helpful have the instructions for new tools (CRM, new Excel planning tool) been?

- Not helpful at all, I have not understood them
- Rather helpful but could have been clearer
- Sufficient
- Very clear and helpful
- Supported my learning perfectly and answered my questions

**11. How do you see the new sales and procurement planning process?**

You can pick several options

- Advantageous for the company
- Challenging to adopt
- Improves co-operation with other departments
- Time consuming
- Helps in improving customer satisfaction
- Generates unreliable forecasts
- Leads to faster start ups
- Improves forecast accuracy
- Helps to improve product availability
- Leads to worse product availability

**12. Have you encountered challenges with the following factors in generating procurement and stock plan (forecast)?**

	not a challenge	minor challenges	some challenges	major challenges	major challenges preventing generation of stock and procurement plan
Lack of data in CRM	<input type="radio"/>				
Time management	<input type="radio"/>				
Lack of communication with sales	<input type="radio"/>				
Not knowing your tasks	<input type="radio"/>				
Technical problems with tools	<input type="radio"/>				

**13. Do you analyze the data available in CRM?**

- Yes
- No

**14. If you analyze the data in CRM, how?**

15. Have you contacted sales to talk about the data in CRM?

- Yes
- No

16. How much time do you spend in generating procurement and stock plan (forecast) monthly?

- Less than 30 minutes
- 30 minutes-1 hour
- 1-2 hours
- More than 2 hours

17. Do you consider that you have received enough support from your local organization?

	Yes	No
BUM/MD	<input type="radio"/>	<input type="radio"/>
Sales and Customer Service Managers	<input type="radio"/>	<input type="radio"/>
Other colleagues	<input type="radio"/>	<input type="radio"/>

18. What kind of support have you received?

### Sales and procurement planning process

19. How is the new process different from the old?

You can pick several options

- Group-level operating model
- Procurement and stock plan is purely based on history data
- Integrated sales and procurement plan
- Procurement and stock plan is made based on sales plans
- Short term view about textile needs and stock development

- Long-term view about future textile needs and stock development
- Long-term view about identified possible future procurement and stock level management needs
- Procurement and stock plan is purely based on CRM data

**20. Who inputs sales plans and offers into CRM?**

- BUM
- Buyer
- Sales and Account Marketing

**21. What is the responsibility of the local buyer?**

- Generate sales plan
- Input offers into CRM
- Generate procurement and stock plan

**22. What kind of information does local buyer use in generating procurement and stock plan?**

You can pick several options

- CRM data
- History data
- Forecast proposal from demand planner system
- Own experience from the past
- current stock balance

**23. For how many months is the purchase plan in pieces needed to ensure the capacity in both wws and mats?**

- 4-8 months
- 9-16 months
- 16-32 months

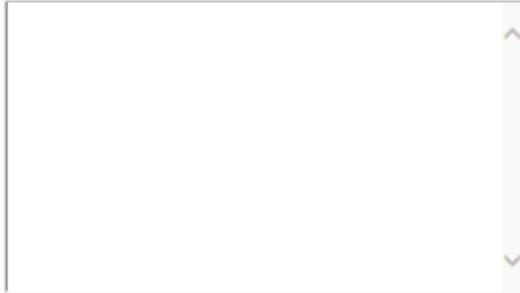
**24. For how many months is the purchase plan in material and color level needed to reserve/purchase needed materials?**

- 5-8 months for wws/ 4-8 for mats
- 9-16 months for wws/2-3 for mats
- 1-3 months for wws/ 5-12 for mats

**25. For how many months is the purchase plan in product level needed to ensure product availability to customers?**

- 1 month for wws/5 months for mats
- 6 months for wws/6 months for mats
- 4 months for wws/2 months for mats

26. Would you like to give some general feedback and comments on the new sales and procurement planning process or your tasks?



100% completed

