



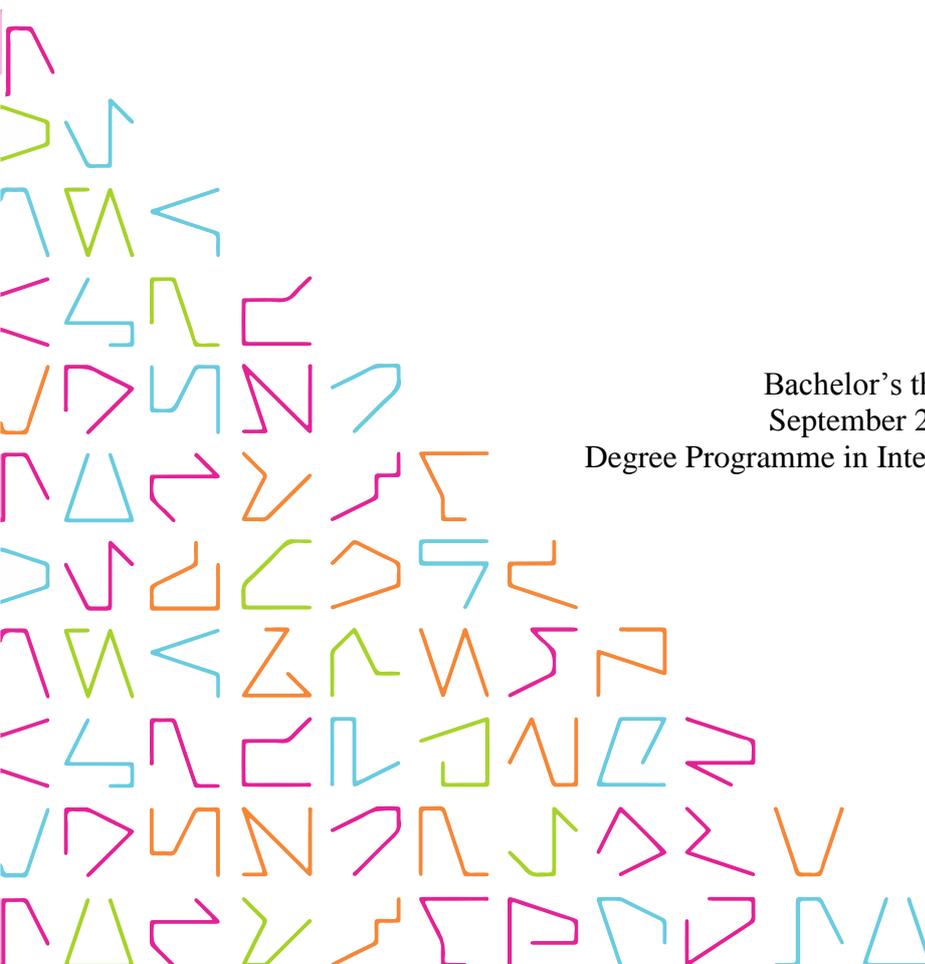
TAMPERE UNIVERSITY  
OF APPLIED SCIENCES

# **ESTABLISHING PROCESS MANAGEMENT: CASE BILLERUDKORSNÄS FINLAND OY**

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## ABSTRACT

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Establishing Process Management: Case BillerudKorsnäs Finland Oy

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The objective of this thesis is to help BillerudKorsnäs Finland Oy (BKF) to produce a process description and to find out how processes can be used as tools in company operations as well as in day to day project improvement work. The aim is to create a foundation for a standardized business culture and a routine of easy and systematic development. The purpose of this research is to demonstrate how processes can be mapped and how companies can benefit from the introduction of processes as tools.

This thesis consists of a written process description and a research to find out what potential BKF employees saw in using processes. While the creation of the process description did not follow any specific methodology, the research was qualitative in nature. The employees at Tampere office were interviewed using semi-structured group interview. The interview was transcribed and analyzed by coding and categorizing content into relevant themes.

The result of the process mapping was a process description of the produce and deliver process, published in this thesis partially. Tampere office personnel evaluated the description and deemed it to be accurate and explicit. The main finding of the interview was that there is clear potential of using processes to improve information flow and defining of responsibilities between internal stakeholders. The second major finding was that there are issues in continuous improvement that cannot be fixed simply through introduction of process management.

It was concluded that BillerudKorsnäs Finland Oy should continue developing a process system as it can concretely improve its operations. Through processes, shared understanding can be achieved throughout the different departments and the benefits of a truly standardized business culture can be enjoyed. BKF should create clear plans and schedules for future process mapping and actively include its employees. Instead of using processes as tools meant just for managers, they should be incorporated into the company culture. BKF should also consider how communication can be improved between stakeholders who are not part of this process project.

There is clear potential in utilizing process thinking even if the intention is not to shift to fully process based management. However, it is important that processes are to be taken seriously and the framework for complete cultural change is nurtured.

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Key words: business process management, business process improvement, continuous improvement, process culture

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# 1 INTRODUCTION

## 1.1 Project introduction

The aim of this thesis is to help produce a process description and to find out how processes can be used to tools in company management as well as in day to day project improvement work in BillerudKorsnäs Finland Oy (BKF). The process selected for further study is the “Produce and Deliver” process. This whole process project also includes mapping other processes, but due to time restraints this thesis will only focus on this one entity. The other areas will be dealt with afterwards, using the knowledge gathered from this thesis. The research method used in this thesis is qualitative research, which will be introduced in detail in chapter 4.

Through these process descriptions this company wants to achieve a routine of easy and systematic development. At the moment BKF has countless of quality reports, but these reports can't be used as tools in the way that the company would like to. This new systematic approach to management will give the company a better foundation for a standardized business culture. With the help of the results of this project the company hopes to find out what the best way to manage processes is and how processes can be used in day to day improvement work.

The need for this kind of a tool has existed for a long time, but only now the necessary resources were acquired so that the project could be moved to the implementation phase. As BKF has a low organizational structure and small internal resources, it was necessary to get additional help to set this plan into motion. The timing is also good, seeing as there is an ERP change scheduled to be implemented during the coming years. Being able to use these new tools could become especially useful during this period of big change.

## 1.2 Objectives and scope

The objective of this thesis is to document and evaluate the produce and deliver process and through research find out how process descriptions could be utilized in this company. This thesis will be answering the following two research questions:

### 1. What is the current state of the “produce and deliver” process?

A detailed process overview with a flow chart and detailed written description will be drafted and evaluated. This is done in order to see how this process is currently implemented and to demonstrate how processes can be documented. The information needed to form this description has been gathered during unstructured discussion sessions. The result of these sessions is the description itself, thus no formal analysis has been used. Creation of the process description has been explained in detail in chapter 5.2. The evaluation by the stakeholders has been conducted using semi-structured group interview.

### 2. How can BillerudKorsnäs Finland Oy use process descriptions to aid in daily work as well as in improvement work?

Stakeholders will be interviewed, using semi-structured interviews, to find out if they see potential in introducing process descriptions into daily work. Since the employees have been introduced to the idea of continuous improvement, a specific interest will be in the potential of using process descriptions as a tool in this daily improvement work. Also, gathering together the knowledge gained from documenting and evaluating the case process and from the literature review, a brief discussion will be presented with some thoughts on how BKF can further use process descriptions.

As can be seen, this thesis will focus on process descriptions as well as improvement work. It will not cover the idea of developing the company structure to fully process oriented one, rather, it will focus on the ways these descriptions can be used as tools. Due to time restraints, this thesis only explores the views of employees in Tampere customer service office, that is, the delivery planners and production planners. Thus the views presented in this thesis are to be taken as directional and not all-embracing and conclusive. The views of the mill workers should be explored in further studies.

### 1.3 Structure

This thesis will first present the basic theory behind Business Process Management (BPM) and Business Process Improvement (BPI). In BPM portion, the focus will be on the general introduction of this management practice, principles of business process mapping as well as using business processes as tools, rather than implementing full structural change. In the BPI part, the need for improvement will be addressed with emphasis on the idea of continuous improvement. It will also shortly present the theory behind measuring processes. The research methodology –part will introduce the basic idea behind qualitative research, as well as explain in detail the tools and methods used in this particular research.

After the theory part, the focus will be shifted to the thesis case. The case company and case itself will be introduced first, after which the development of the process description will be explained along with results of the brief stakeholder evaluation. After that the main study, findings about the potential of process descriptions, will be presented. This part will cover the research process and the research results. Finally, a conclusion chapter will gather all the threads by discussing the possibilities of using process descriptions, considering the information gathered during this project. It will also evaluate the whole project to see what could have been done differently and how BKF should proceed in the future.

## 2 BUSINESS PROCESS MANAGEMENT

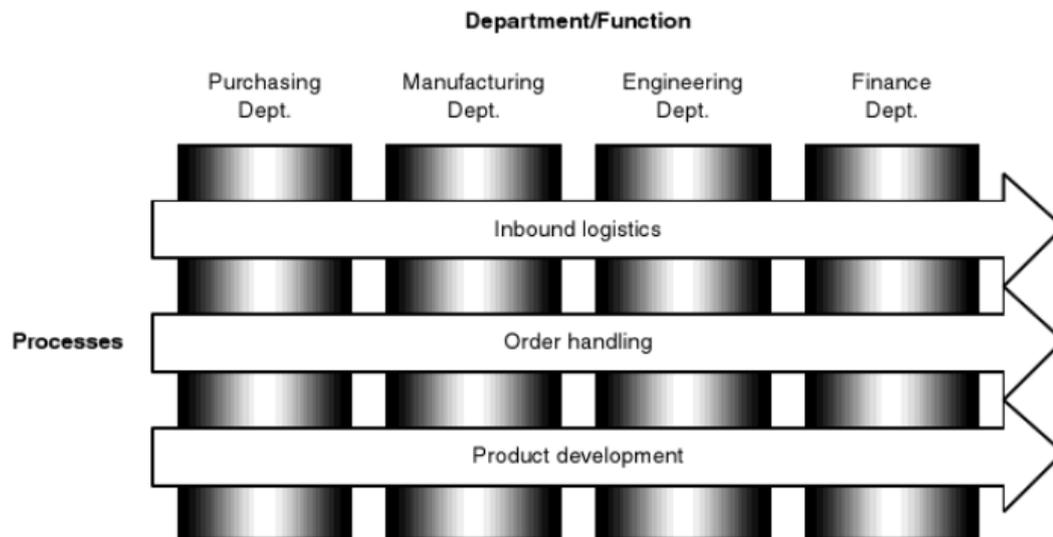
### 2.1 Business processes

To achieve its goals, a company needs proper management. Without management, the efforts of the organization are not aligned towards the same objective. And without a formal structure, the way how work is organized, the efforts of the members cannot reach their full potential. A company structure provides a framework which supports the efforts of the staff and makes it possible to carry out effective performance of key activities. Essentially, a company structure provides a foundation for managing the company. (Mullins 2010, 7, 12, 542, 576.)

One of the traditional ways of organizing work in companies is departmentalization: dividing the organization and its people based on different tasks. This kind of vertical division can be beneficial, as it allows workers to specialize and it gives them the security of knowing exactly what their roles are in the organization. (Laamanen 2012, 15.) But it is also a cause for many problems, as departments can create solid boundaries. Workers prioritize and focus on their own departments tasks and have limited communication with other departments. The result organization is the sum of individual goals and performances, with possible conflicting objectives. (Andersen 2007, 29-30.) Setting department specific goals eventually leads to neglect of customer relationship development as it is really hard to set goals for single departments with customers' needs as a first priority (Laamanen 2012, 16).

A logical transition from departmental thinking is to focus on processes. Processes are a set of interconnected actions that are planned in order to fulfil a need of a customer. These processes turn a company's input, the needed material and information, into outputs, the final products. Inputs can be material or information, and they are transformed in the process in order to get the end result, output, that is presented to the customer. (Laamanen 2012, 19-20.) Processes always have a customer, and it can be either external or internal. The customer is whoever needs the output of the process. (Berman 2014, 13.)

Process oriented organizing eliminates many of the problems that are present with departmentalization. Managing processes rather than departments reduces conflicting goals and encourages better communication over boundaries. As can be seen in picture 1, processes run horizontally through different departments, engaging different departments into same goal. (Andersen 2007, 31-32.)



PICTURE 1. Vertical departments and horizontal processes. (Andersen & Pettersen 1996, see Andersen 2007, 28.)

Processes are planned based on customers' needs, thus ensuring truly customer oriented performance. Responsibility is also better defined and processes provide better foundation for time and resource management. Processes are defined as functions within a company that are stable and repeatable and that can be modelled and developed (Laamanen 2012, 20), thus they create an excellent foundation for performance improvement (Andersen 2007, 31-32). Maintaining a process system can also create value to the company through standardizing operations. When all the workers have the same approach to work, the quality of the output will not vary. Documented processes can also help new employees to get accustomed to their job. For business managers they offer an excellent way to ensure that the work steps are consistent with the company goals. (Berman 2014, 15-17.)

Processes can be divided into different types in many ways. One way is to classify processes into primary processes and supportive processes. Primary processes are essential, value-creating functions of the company that can be further divided into more detailed sub-processes. (Andersen 2007, 34-36.) Primary processes have a direct connection to

the external customer. Supportive processes, on the other hand, are not directly connected to the end customer; they are internal processes such as human resource management or financial management. They are however essential to the functioning of primary processes. (Laamanen 2012, 54-57.) These processes are interconnected and make up a chain of processes, the output of one process ending up as an input for another. Together they form a system of processes that describe the business as a whole. (Berman 2014, 14.)

## **2.2 Business process management**

There are multiple management types that have influenced the current Business Process Management. Managers haven't always had a strong emphasis on process control, even though it can be said that the roots of process improvement lay already in the works of Henry Ford and Frederick Taylor. (Harmon 2015, 38-39, 43.) Much bigger influences for BPM can be traced from more modern management approaches. Toyota Production Systems and the concept that has been derived from it, Lean, focused on continuous improvement and minimizing waste, principles that can be perceived to be part of modern BPM. Another major step was introduced in the 1990's through process re-engineering, which, as the name implies, standardized the idea of radical process re-designing. It also gave spotlight to non-production processes. (Davenport 2006, xiii-xiv.)

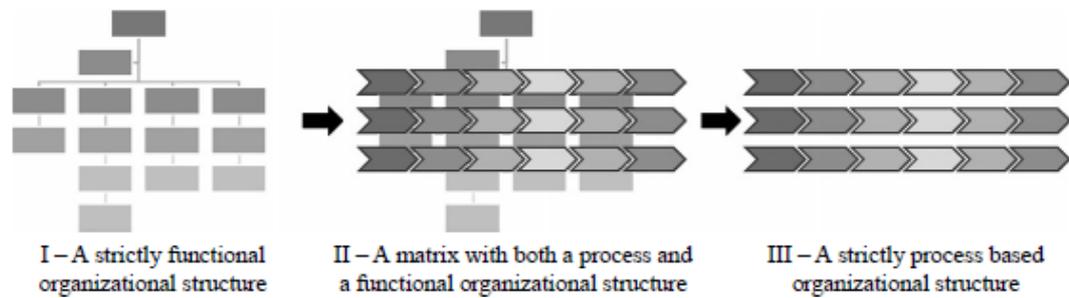
Lastly, the most recent big influence has been obtained from Six Sigma, which combined process improvement with statistical quality control. Lean and Six Sigma, which were combined at the beginning of this century into Lean Six Sigma, were the closest in embracing processes as a cultural change running throughout the organization before BPM. BPM was born through the development of these many influential management ideas and now combines fragments of different approaches under one management style. (Harmon 2015, 41, 78.)

However, there is no simple dictionary definition of what BPM really is. Among the BPM community there is no agreed approach to BPM, some link it to technological applications, and some still see it as a part of Business Process Re-engineering. (Jeston & Nelis 2006, 9-10.) In this thesis, the view of BPM as a management approach, sepa-

rate from BPR, is taken. One popular BPM definition is that of Mohamed Zairi (1997, 64): “BPM is a structured approach to analyse and continually improve fundamental activities (...) and other major elements of a company’s operation.” Practically put, BPM is a managerial effort of “improvement, management and control of essential business processes” (Jeston & Nelis 2006, 11), linking these business processes to company objectives as well as customers’ needs (Lee & Dale 1998, 215).

Essentially BPM assures that good performance can be repeated. In order to repeat quality, major processes need to be properly documented and then further continuously measured. Only through continuous improvement can a company ensure that the outputs are delivered using optimal performance. Zairi (1997, 65, 79) also notes that benchmarking and getting inspiration from best practices are important ways to ensure exceptional competitiveness through BPM.

It is argued that in order to really work, business process management should be approached as a complete cultural change in an organization (Hinterhuber 1995, 67; Zairi 1997, 65). But even when a company strives to be a fully process based organization, according to professors Lockamy III and McCormack (2004) it has to go through a so-called maturity model in order to establish a whole new culture. It has to slowly transition itself from functional organization, through matrix phase to process organization. (McCormack & Lockamy III 2004, 275) In her case study and literature review, Klara Palmberg (2010) suggests that instead of heavy, full transitioning to a process oriented organization, it can be more beneficial for a company to stay in a moderate matrix approach. One of the problems of the fully process oriented organization the companies in Palmberg’s case study addressed, was that the presence of mixed teams made it hard to communicate with those who had the same functional responsibility. Despite its potential complexity, a matrix structure provided the companies with constructive dynamic relationships, multiple perspectives on cases and better co-operation. (Palmberg 2010, 108.)



PICTURE 2. Transitioning functional structure to fully process based structure, through matrix structure. (Palmberg 2010, 99)

It seems that not many companies have fully embraced process culture yet, and the reason for this could be that BPM is still a relatively young concept. As demonstrated in research executed by Thomas Neubauer (2009), companies believe that BPM has great importance in business life and is gaining importance rapidly, but the skills to put it into practise are still lacking. Companies do not fully understand it yet and are thus unable to perform it to the fullest, hence the preference to stick to matrix models. (Neubauer 2009, 181.) It could be that as BPM as a concept matures and becomes more familiar, more companies will have the courage to strive to be strictly process based organization.

### 2.2.1 Key principles of BPM

There are some elements in BPM that can be considered to be essential for holistic implementation. But just as there are many views of the description of BPM, there are also countless of views about what are the key features of this management practice. For this thesis, the basic structure of Rosemanns and vom Brockes study (2015, 107-108) will be adapted. Drawing information from multiple researches especially in the field of maturity models, Rosemann and vom Brocke present a noteworthy base for further inspection of this management practice.

The first important element is identified as **strategic alignment**, a tight connection between the organization's priorities and their processes. Rosemann and vom Brocke (2015) invite readers to think about the strategy of a company through processes. Among the questions to think is how business processes contribute to the strategy and how in contrast processes are affected when changes are made to the strategy. (Rosemann & vom Brocke 2015, 113.) Successful establishment of BPM culture requires that

the company goals are indeed aligned and that the employees are working towards the same target, which in terms of BPM is adding value to the end customer (Zairi 1997, 67). In their own research of BPM principles, Mertens et al. (2014) suggest that giving the strategic goals attention helps the company achieve transparency, and further, shared understanding which enables effective process improvement and value creation. They also stress that BPM should be implemented for a purpose and “embedded in the organizational structure”. (Mertens et al. 2014, 533, 537-538.)

The second element to consider is **governance** of BPM. It includes the proper accountability of roles and responsibilities, as well as the management of metrics and standards. The roles of personnel involved with BPM need to be transparently structured along with clearly specified responsibilities. It is important that in a critical situation everyone knows their role. (Rosemann & vom Brocke 2015, 114.) One important process role to be established is that of a process owner. In a traditional functional organization structure managers manage people and departments, which is not an ideal set up for process oriented enterprises. In process organization there’s need for process development, and that is the responsibility of a process owner. Process owner needs to understand, institutionalize and, most importantly, improve the processes. A framework for successful process environment can be established through the decisions of a process owner. (Laamanen 2012, 123-125.)

In addition to well specified roles, the proper establishment and documentation of standards and metrics is important, since the overall process performance should have a direct connection to strategic goals (Rosemann & vom Brocke, 2015, 115). Through governance practises companies can make BPM values part of the organizational culture, and thus make sure that BPM becomes a permanent practise instead of being an ad hoc project (Mertens et al., 2014, 535).

The next focus is in the **methods** that can be used to support process activities. Methods should be chosen based on the process lifecycle stage it will be used on. There are different needs for different stages, for example introducing processes does not benefit from methods specifically designed for process improving. Rosemann and vom Brocke (2015) identify five different stages and the types of methods they can be paired with. First is the process design stage, which can be associated with methods that can identify and conceptualize processes. The second stage is process implementation, for which

methods that help transfer theoretical models into executable specifications are suitable. The next stage is process control and measurement. It can benefit from models that can help with process related data collection. The process improvement stage, on the other hand, can be paired with methods that ease the development of processes. These methods take advantage of techniques such as process innovation, utilization and benchmarking. The last stage to consider is process project management which gains an advantage from the overall management of BPM as well as project management methods. (Rosemann & vom Brocke 2015, 115-116.)

As with process methods, **information technology solutions** are sensitive to different process lifecycle stages. Different IT solutions help out with the specific needs of different stages. These solutions include process modelling and controlling systems, learning tools for improvement work, case management systems, decision support systems, etc. (Rosemann, vom Brocke, 2015, 116-117.) Mertens et al. (2014) warn that thinking about IT management as an after thought can impact, among other things, the whole continuity of an organization. BPM should use the opportunity to inherit relevant IT solutions, and the technology should be managed from the point of view of the whole enterprise instead of single departments and functions. (Mertens et al. 2014, 538-539.)

The key principle of **people** puts emphasis on human resource management within the scope of process management. It is important to manage the skills and knowledge of individuals or groups who can influence the output of the process. Naturally all stakeholders, and especially those involved in management, need to have skills to match the specific requirements of a process. They also need to possess knowledge of processes in order to fully embrace BPM. This kind of skillset and knowledge does not just suddenly appear to the relevant people; there needs to be process related education in order to secure development of skills. (Rosemann & vom Brocke 2015, 117.) An organization truly investing in BPM capabilities can avoid BPM from becoming an ad-hoc fire-fighting technique (Mertens et al., 2014, 535).

Skills do not just cover technological knowledge, but skills in communication as well. The way in which the stakeholders interact and communicate can affect the outcome of the process and thus it needs to be given the appropriate attention. (Rosemann & vom Brocke 2015, 117-118.) All stakeholders need to have a common understanding of processes and thus complex process language should be avoided. Process should be a term

that everybody understands and everyone shares the same idea of. With common understanding in place, process thinking can grow better roots in the culture of the organization. (Mertens et al., 2014, 536-537.)

The last key principle is **culture**. Culture is seen as “the collective values and beliefs that shape process-related attitudes and behavior to improve business performance” (Rosemann & vom Brocke 2015, 118). In order to gain the full potential of BPM, it should be implemented as a permanent practice. This can be done by adapting BPM-values as part of the organization’s culture and making BPM a normal part of the daily work. (Mertens et al., 2014, 534-535.) Stakeholders should adopt process related values and beliefs, and for them, processes should be “the way things are done” (Rosemann & vom Brocke 2015, 118).

An important aspect of culture is the way in which organizational change is handled. Change is often seen as threatening and in order to avoid resistance, it is important that stakeholders affected by the processes should be involved in process talks and plans. With involvement comes commitment and with commitment comes easier introduction of BPM as a wholesome culture. (Mertens et al. 2014, 536-537.) Laamanen (2012) notes that resistance comes from the feeling of being the object of change. Thus, with proper involvement, stakeholders should be treated as the subject of change instead. Involvement and commitment requires proper knowledge which cannot be given simply through fact briefing, there needs to be proper education and effective techniques in place. (2012, 260-261.) This requires that proper attention is targeted from leaders to processes and process changes (Rosemann & vom Brocke 2015, 119).

### **2.3 Process mapping**

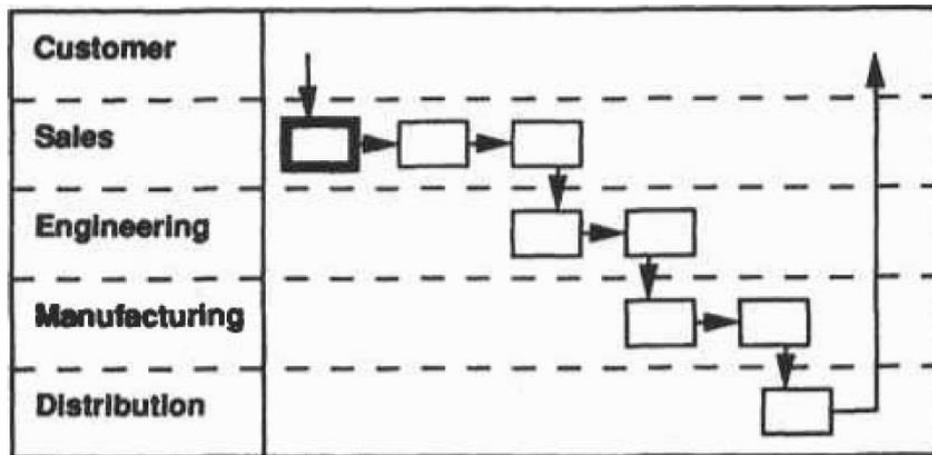
For many a process map, the visualization of a process, is the first thing that comes to mind when talking about business process management. And not without reason: although creating a process map should not be the goal of BPM, mapping processes is a crucial part of it. (Laamanen 2010, 75.) Through process mapping an organization can achieve a shared understanding of the process. As a communication method, it gathers the knowledge of shareholders into same place and makes the information easily shareable. Process maps turn vague ideas and assumptions into knowledge and most im-

portantly, make stakeholders aware of how their contribution affects the overall process. (Andersen, Fagerhaug, Henriksen, Onsøyen, 2008, 3-4.)

Process maps can be created to show how value to the customer is currently generated, but they can also be used to display how the work could be developed. By analysing the current processes, using the help of process maps, areas that could use improvement can be identified. (Damelio 1996, 1-2.) On top of visualizing how things are and how they could be, maps can be used f. ex. for training new employees, communicating and analysing responsibility (Andersen et al. 2008, 11), identifying alternative ways to get the work done and strengthening the knowledge of causalities and connections between work tasks, just to name few possibilities (Damelio 1996, 2).

There are different types of process maps that have attributes suited for different purposes. One common map is a relationship map that generates a picture of the relationships between different stakeholders, without showing any specific work activities. This map acknowledges that an organization exists within a broader system and gives an idea about the relationships between organizations and suppliers, as well as organizations and customers, without forgetting to shed a light on relationships within the company. Then there are flowcharts, which can be used to show how a single specific output unit is created. They are a great tool for categorizing tasks into value creating and non-value creating. (Damelio 2011, 4,8.) While relationship maps provide a rather general view, flowcharts go into great detail to show how things actually get done (Damelio 1996, xi).

Between these two types of maps, there is a third one that is not as vague as a relationship map and not as detailed as a flowchart. A cross-functional process map (also known as a swimlane map) shows what steps are taken in a single process and who is responsible for which step. (Damelio, 1996, xi.) It illustrates how the workflow of a single process goes through different functions of the organization (Damelio, 2011, 6). This map shows who is responsible for what, and thus it can be used to evaluate responsibility within the process as well as identify improvement possibilities (Andersen et al. 2008, 11, 13). In this thesis's case study a cross-functional process map was crafted in order to clarify the current state of the rather broad process of producing and delivering the main output, paper, to the customer.



PICTURE 3. A cross functional flowchart. (Damelio 1996, viii)

The decision to map a certain process can result from a span of things. One of the most obvious reasons is that a problem within the process has been noticed. Customer complaints, high number of errors, lengthy process time, high costs etc. can point out a process that could benefit from detailed study. There doesn't need to be a problem for a process to be mapped, though. The need for better understanding, better documenting for training purposes or meeting certificate requirements might initiate the need for mapping. Any process that has not been reviewed for a while will most likely present improvement opportunities upon documentation. (Graham 2004, 17.) Some other reasons to choose a particular process for mapping can relate to the strategic importance as well as the potential for improvement (Laamanen 2010, 83).

There are features that make a process description a good one, and as it was with the concept of BPM, there are different views of what is of importance. Laamanen (2010) sees the following qualities as most important:

- It holds information of the most **critical aspects** of a process: a differentiation must be made between the less important and actually important matters. It also shows connections between these important aspects.
- **It should show action**, not the flow of information. Information is important, but it will be present when mapping actions. Through actions the end use of information becomes clearer.
- The map should **flow from left to right**, highlighting the horizontal nature of the process.
- **The role of customer should be present in the map.** If the customer is not represented in the process map, there is a risk that the focus of improvement work

will be solely in internal matters and the concentration on the customer is forgotten.

- **It should include roles.** When roles are presented instead of departments, people can better recognize their place in the process. (2010, 76, 78, 80-81.)

Many process maps use symbols to convey the message quickly. As Damelio (1996, 10-12) puts it, symbols show which actions are taken in a process. With symbols, one can better identify waste, delays etc. However, Laamanen (2010) recommends using as few symbols as possible, as they are not essential in the process, nor do they increase overall understanding. Too many details in a process map can result in readers seeing the map as too complicated. (Laamanen 2010 79-81.) As per Laamanen's recommendations, in this project the symbols were kept to a minimum. A square was used to represent action and customers' actions were differentiated with an oval symbol and an arrow was used for information flow. In addition, a decision symbol was used. The decision symbol, written as a diamond, can be used to represent an output with a "yes/no" situation (Page 2010, 90).

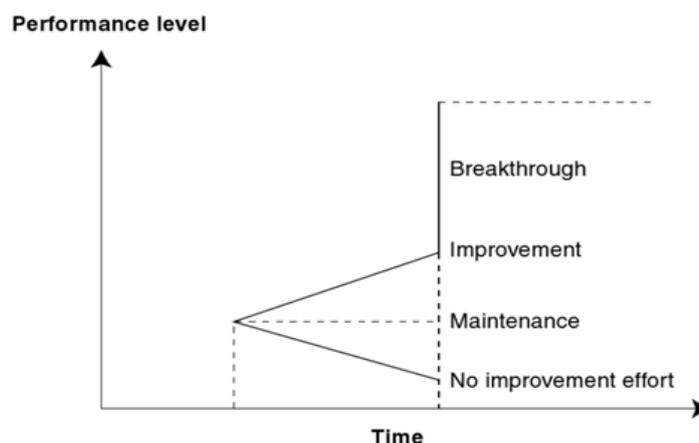
In addition to a process map, a supportive written procedure can be crafted. These procedures can be created to hold very precise and detailed information; however, they may not always be the most crucial part of defining processes, especially when aiming for process improvement work (Andersen 2007, 42-43). Laamanen (2012) however notes that in order to reach the aforementioned requirements of a process, one needs more than just a mechanical flowchart. A written procedure helps reach understanding, but it should not be too long, as people rarely are willing to focus on long descriptions, and the longer the text is, the blurrier the whole vision gets. (Laamanen 2012, 77-78.)

### 3 BUSINESS PROCESS IMPROVEMENT

#### 3.1 Improving processes

Business process improvement is “a systematic approach to realign critical organizational processes to achieve breakthrough improvements” (Davis, King & King 2014, 4). It is an on-going effort to evolve the current way of doing business, and by doing so, making it possible to increase the value offered to customers by doing things better, faster and cheaper (Flanigan & Scott 1995, 3, 5). Successfully implemented BPI can help companies decrease business unit costs and increase profitability, close competitive gaps, enhance communication and increase employee performance. Most importantly, it can lead to higher customer satisfaction and thus long term business success. (Davis et al. 2014, 46.)

Every organization needs some degree of improvement. The minimum requirement for keeping your customers is maintaining the current level of performance; as seen in picture 4, the performance level is set to decrease if even maintenance efforts are ignored. But it is often not enough to just maintain. In the current business environment, where everything is constantly on the move, something that met customers’ expectations a few years ago may well be out-dated by now. For the demanding customer base, needs must be exceeded. And if companies cannot do that, for sure their competitors can. Thus, instead of thinking if improvement work is necessary, it is more appropriate to think about how improvement is implemented. (Andersen 2007, 2-3.)



PICTURE 4. The importance of maintenance and improvement efforts. (Andersen 2007, 3)

Implementing a BPI project can prove to be difficult and requires discipline and a systematic introduction plan. Resistance to change can often be a real challenge, as it is hard to diverge from the comfort and certainty of doing business the old way - however inefficient it may be. Companies need to set tangible goals, guidelines for problem solving and allocate adequate time and resources for the project. Change requires investment and commitment, and this cannot be done without management guidance. (Mutafelija & Stromberg 2003, 14-15.) Proper improvement requires that the company culture is ready for effective work towards evolving. Critical inspection should be placed on how the roles and responsibilities are distributed, what information methods are used and how values are shared. (Davis et al. 2014, 47.)

In this project, one of the reasons for further process studying was the wish to define a good base for improvement work. There are many ways to implement process improvement, but in this chapter a closer look on tools used by BKF is taken. First the idea of continuous improvement is introduced, followed by a short overview of the use of the PDCA cycle. After that a short description will be given on process measurement, followed by view on improvement culture.

### **3.2 Continuous improvement**

Improvement can be achieved through notable modifying of processes, often referred to as process re-engineering, or through more gradual and moderate change management called continuous improvement. By words of Grace Duffy (2013, 17), continuous improvement can be described as:

a management approach to improving and maintaining quality that emphasizes internally driven and relatively constant (...) assessments of potential causes of quality defects, followed by action aimed at either avoiding a decrease in quality or correcting it at an early stage.

Continuous improvement can be achieved through *kaizen* culture. Kaizen relies on small, daily improvements carried out in every function of the company. Together these streams of small improvements accumulate into a large river of noticeable gains. (Boeder & Burton 2003, 72.)

Kaizen essentially aims to eliminate waste. Improvements can be achieved f. ex. through simplifying processes, synchronizing workflows, minimizing the number of

moves and making systems more visible. Although many associate kaizen with quick improvement actions, known as *kaizen blitz*, the culture can also be achieved through longer, more intensive projects. *Project kaizen* can last for several weeks and aims to increase the value of multiple functions of an organization. It is often initiated and supported by senior-level management and utilizes the expertise of cross-functional teams. Kaizen blitz, on the other hand, is arranged at employee level for the purpose of eliminating waste through quick process improvements. Although kaizen is meant to be implemented without much hassle, all kaizen actions require a structured approach and proper coordinating. (Boeder & Burton 2003, 76-79.)

The benefits of embracing continuous improvement culture are undisputable and well recorded. Companies can achieve noticeable results through low-cost approaches and enjoy exponential benefits. Continuous improvement also empowers and motivates employees. Workers are given the power to change their own work and this culture of trust enables them to constantly think of new solutions to make things better. (Boeder & Burton 2003, 75.) Through appropriate everyday attention, properly implemented continuous improvement can yield better overall performance, greater productivity and an increase in sales and cash flow (Duffy 2013, 6, 8).

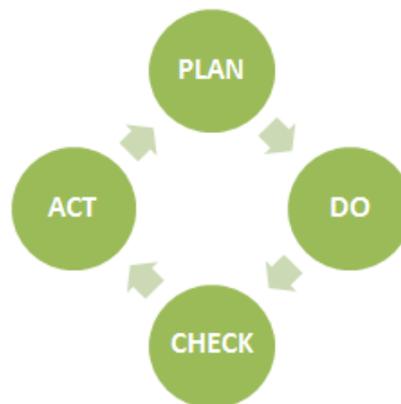
When talking about continuous improvement, it should be understood that it should not be implemented just for firefighting. Improving is not the same as fixing. Fixing happens when a defect is detected and corrective measurements are taken. This is reactive improvement. If an organization is only reacting, it cannot thrive and will most likely always be a step behind its competitors. Improving can and should happen even before performance problems affect customer satisfaction. Processes and continuous improvement are good foundations for innovative improvement. (Laamanen 2012, 205-207.) It is also noteworthy, that important as it is, continuous improvement cannot work without occasional breakthroughs and vice versa (Andersen 2007, 4).

### **3.2.1 The PDCA cycle**

Even if the focus is on the smaller entities, the goal of any improvement activity is to affect the whole value chain of activities, and improving single processes here and there without proper plan might not yield the desired long term results. For that there are tools

with which even smaller improvement activities can be realized to their full potential. (Duffy 2013, 17.) One way to implement a culture of continuous improvement is to follow the Deming cycle, more commonly referred to as the PDCA –cycle. In this project, the PDCA is closely linked to process audits and it is the tool for continuously fine-tuning the process.

PDCA is short for Plan, Do, Check, Act. Continuous improvement and the PDCA cycle thrive from a culture, where nothing is settled and one should not be content with anything, as there are always things that can be improved. It can be applied to small and big projects alike and it follows a path where current situation is first assessed, improvements are planned and then implemented, followed by a phase where improvement success is assessed. This cycle is repeated until desired results are achieved. It is an essential part of continuous mindset that this wheel is kept in constant motion. (Andersen 2007, 6-7.)



PICTURE 5. The continuous PDCA –cycle.

The first step is to **plan**. Subject for improvement is selected and thoroughly analysed. The affected process is evaluated “as is”, that is how it is currently implemented. The problem is identified and data about it gathered f. ex. through root cause analysis. This step is followed by a **do** phase, where problem solutions are generated and implemented through trial phases. The result of this implementation goes through a **check** phase, in which data about the chosen solution is gathered and analysed. The final phase is **act**. If the solution is effective, it can be adopted and further monitored. If not, the cycle begins again. Even if the solution turns out to be effective, the cycle does not end here; further improvement opportunities should be constantly looked for. (Mutafelija & Stromberg 2003, 16-17.)

The magic of PDCA is that it is simple, easy to use and can be used by virtually anyone in the company. It can be used for both quick fixes and permanent corrections. (Sokovic, Pavletic & Kern Pipan 2010, 478.) It allows project plans to be adapted to prevailing conditions throughout the improvement process and it encourages iterative way of learning. It provides a versatile yet simple way for people to take action that results in improved and useful solutions. It is also an excellent framework for use of other methods and tools. (Moen & Norman, 10.) In this case project, the PDCA cycle is used as a tool in maintaining and improving process performance level.

### **3.3 Measuring processes**

Proper measurement is important to improvement management, as one cannot improve a process unless its current performance is known (Anderson 2007, 65). “Measures are the most specific, objective way for people to understand exactly what is expected on the job” and through good measurement, achievements from improvements will become visible. Well-developed measures are thus very effective communication tools. (Duffy 2013, 28.) For business owners, measuring will give insight on whether or not planned improvements actually work. Through measurements a company can better communicate their strategy and enable a thorough analysis of different phenomena behind the results. (Laamanen 2012, 107, 150.) When it comes to processes, measurements can f ex. indicate which processes or parts of processes need improvement (Andersen 2007, 66-67).

Performance can be measured in many different ways, but whatever indicators are followed, they should be well thought and in balance. Indicators can be hard or soft. Hard indicators, like manufacturing time for instance, can be measured directly and they provide objective data. Soft indicators, like satisfaction, are much harder to measure, but are critical in giving a complete picture of a situation. Although it would be easier to just follow hard indicators that are easily measured and handled, unilateral measuring will not likely end in good results. One has to, for example, think about lagging; if a company pays too much attention to financial results, they might be lagging behind the actual situation. When bad results come in, it might have already affected the customer satisfaction. Thus the measuring of issues, rather than results, should also be taken seri-

ously. By measuring processes diversely, it can be ensured that the focus is on the whole entity rather than one aspect of it, as focusing on single thing often results in the neglect of another. (Andersen 2007, 70-74.)

In all of this, it must be remembered that numbers are not everything. Numbers are only the tip of the iceberg and underneath is a much wider phenomenon waiting to be improved. Measurable results do not tell the whole truth, and in the worst case scenario, can block important changes from happening. As said by Laamanen (2012) “it is advisable to advance good endeavours, even if they or their results cannot be expressed in numerical measurements”. People cannot always align their behaviours according to measurable profits, but through processes they will get a better picture of what is critical in reaching good results. (Laamanen 2012, 149-150, 204.)

### **3.4 Culture of improvement**

As with processes in general, continuous improvement should be established as a culture. Many highly successful companies have this in common; they nurture a culture where continuous improvement is encouraged. They boast confidence and optimism and most importantly, they are never content in what they do, but in a constant pursuit for better performance. (Andersen 2007, 103-104.) A company has achieved a culture of continuous improvement, when workers see making improvements as a part of their normal routine, instead of feeling as though it is time away from regular tasks (Burton & Boeder 2003, 62).

Although a culture is not achieved overnight, there are some things with which it can be stimulated. One good way of keeping the PDCA cycle in motion is to subject the company to benchmarking. Exposing the established ways of working into something potentially more effective can bring a much needed reality check and stimulates improvement ideas. One way has to do with attitude towards achieved improvements. They should be openly celebrated and those responsible rewarded. The buzz creates an excited atmosphere and rewarding motivates employees to aim higher, as they notice that it concretely pays off. (Andersen 2007, 103-105.)

Above all, good employee management is in the core of successful implementation of improvement culture. Every potential idea should be addressed and the culture of taking feedback seriously nurtured. (Andersen 2007, 104.) After all, it's those who are working in the process, who know most about it and know the best ways to change it for better. As people are actively taking part in improvement, the resistance to change diminishes. For this to happen, the management must be willing to give power away and trust their employees, while providing them with the necessary support and proper education. (Burton & Boeder 2003, 58-59, 75.)

The importance of good management should not be overlooked either. Commitment is one of the most important requirements for managers. It doesn't mean just monetary commitment; management should have true passion to succeed and a true willingness to put themselves on the front line. It is true that their example of genuine interest and engagement how "teams get glued together in unity of purpose". Management should embrace the way of "do like I do, not as I say". (Burton & Boeder 2003, 53-55.)

This does not concern only senior management. In fact, as found in the research conducted by Alhaqbani, Reed, Savage and Ries (2016), middle management involvement has a huge impact on the success of improvement initiatives. In their research, Alhaqbani et al. found that their subject company had poor employee involvement and a lack of actual problem solving despite having an active quality management strategy in place. This turned out to be connected to the lack of middle management commitment. (Alhaqbani et al. 2016, 924, 935.) It is thus obvious that proper engagement and education throughout the whole organizational structure is vital.

One way management can convey their commitment is through adequate communication. There is a great power in proper communication, paired up with similarly aligned actions from the management. With communication, management can address any fears attached to improvement project heads-on and also make sure people have the correct expectations. Through good communication, management can make sure that interest towards improvement does not wither over time (Burton & Boeder 2003, 58.)

True benefits can be seen when a proper improvement culture is truly embraced. True improvement does not manifest if improvement projects are run every now and then and only by experts. Only by involving everyone and making improvement part of everyday

work one can enjoy the undisputable benefits of continuous improvement. (Micklewright 2010, 207.)

## 4 RESEARCH METHODOLOGY

### 4.1 Qualitative research and research design

There are two main research methods used broadly; qualitative and quantitative researching. While quantitative research leans on using statistical analysis, qualitative research explores social relations (Adams, Khan, Raeside & White 2007, 26). Qualitative research is often considered “soft” research, dealing with texts and interpretation rather than numbers and statistics, which are the trademarks of “hard”, quantitative research (Bauer, Gaskell & Allum 2000, 7). With this harsh bifurcation, there is a risk that qualitative research is considered less scientific than its more mathematical counterpart. The confrontation is however useless when talking about the quality of the research, as the most important thing should be doing good research with the most fitting methods to a particular problem. (Eskola & Suoranta 1998, 11-12.)

The purpose of a qualitative research is not to look for causalities nor find consolidation for hypotheses. In fact, in qualitative research there is no need to set hypotheses beforehand as they are part of the outcome of the research. Rather than confirming assumptions, qualitative research would ideally offer new perspectives. Thus a researcher should not constrain themselves with presumptions, but seek to learn from the research. (Eskola & Suoranta 1998, 20; Saaranen-Kauppinen & Puusniekka 2006, 7, 13-14.)

Eskola and Suoranta (1998) have listed some attributes they consider to be essential to qualitative research. First of all, data collection, at its simplest, deals mainly with texts, as well as other written, pictured or recorded material. The research plan as well as the interpretation of the issue at hand can change throughout the data collection process. The amount of people included in the research should be decided based on the quality of the samples, rather than the quantity; the researcher should build from blocks that give the research a strong theoretical foundation. Generally speaking, in qualitative research the researcher has more freedom compared to a quantitative researcher; sometimes qualitative research is considered to be a subjective way of creating information. In reality these different research methods differ only so much, and the main idea is to find the right view for the right purpose. (Eskola & Suoranta 1998, 13-18.)

Based on the aforementioned attributes, qualitative research methods were seen as the most fitting way of data collection for this project. Using qualitative research can be justified, seeing as it is a way of finding out how things work in particular context (Mason 2002, 2.) This kind of information about process systems can be acquired using quantitative methods, but for this project the focus is on building qualitative analysis using the know-how of the stakeholders. Initially, information from both sides should be taken into consideration when evaluating a process (Laamanen 2012, 209), but this work will not cover quantitative analysis.

As the topic of this thesis implies, this research falls into the genre of case study. Case study explores the details of a single unit – one person, one group, or as in this case, one organization. Focusing on one single unit provides the researcher a possibility to get in-depth information about the issue in hand. (Saldaña 2011, 8.) As explained by Yves-Chantal Gagnon (2010, 2-3), being able to study a phenomena in detail and being able to produce high internal value through authentic representation are the main advantages of a case study. While a certain case can be chosen based on its uniqueness or representativeness, it can be also chosen simply based on its general convenience, as it was with this case. Although it is possible to draw some interpretations about how the single case can represent broader affairs, it does not have to be a necessary target for the research. (Saldaña 2011, 8-9.) Gagnon (2010, 3) argues that it is more than likely that generalization cannot be made, simply due to case studies incompatible attributes, exactness and narrow focus. The perception of each cases generalizability can be left to readers own interpretation (Saldaña 2011, 9).

## **4.2 Data collection methods**

As Adams et al. (2007, 107) puts it, the quality of the research depends on the effectiveness of data collection. The researcher should not choose the method solely based on what feels good, but rather think of a method that best helps to achieve the research objectives. In reality, resources also have to be taken into account, thus the methods will often be chosen based on how it fits the whole research in an organizational setting. (Brewerton & Millward 2001, 69.)

In this particular project there was no intention to heavily disturb the normal working routines, thus the data collection was to be kept light and not time consuming. First, the produce and deliver -process map was created during several discussion sessions, rather informal in their nature. As this part of the project was not really following any certain research methodology, it will be introduced later in detail in chapter 5.2. The main research focus was in receiving feedback on how the employees feel about the process descriptions and how they see their potential. For this part semi-structured group interviews were used.

In the words of Daphne Keats (2000), an interview is “a controlled interaction which uses verbal exchange as the main method of asking questions”. One of the many characteristics of an interview is that it is structured and it has a purpose, even in an informal setting. (Daphne Keats 2000, 7.) Also, an interviewee has the opportunity to form their own answers and interact with the interviewer. Thus interviewing is an excellent tool to gather in-depth information about the subject at hand. (Gillham 2005, 3-4.) As interviewing is also an excellent tool for gathering the perspectives of individuals or groups (Saldaña 2011, 32), this method was used to see what stakeholders think about the processes.

Semi-structured interview is characterised by having some parts of it pre-planned while having the openness for interaction (Hirsjärvi & Hurme 2010, 47). Saaranen-Kauppinen and Puusniikka (2006) note that semi-structured interview resembles a theme interview, which has a pre-determined theme but otherwise follows a loose structure and echoes a rather free flowing conversation. A semi-structured interview also has a theme, but the questions can be decided in advance and they can be asked in a certain, exact order. In contrast to structured interview, which usually utilizes a survey and thus asks the same questions in the same order from all participants (Saaranen-Kauppinen & Puusniikka 2006, 56-57), semi-structured interview allows the interviewer more situation aware discretion (Hirsjärvi & Hurme 2010, 45). This method was used as it provides a certain support for an inexperienced interviewer through its pre-determined themes and questions. On the other hand, it allows some freedom to alter the interview based on how the whole situation and the discussion develop.

An idiosyncrasy to this research is, in addition to utilizing semi-structured interview, that it will be carried out using a group interview instead of individual interviews. In

group interview, the aim is to have a group discussion based on the pre-defined themes set by the interviewer. In a group interview, the interviewees will get support from each other; they can encourage each other to speak and together reminisce the facts about the given theme and/or questions. Thus a group interview can generate a lot of information. (Eskola & Suoranta 1998, 70-71.)

The benefits of a group interview are many. According to Sulkunen (1990, 264) being able to gather the opinions and views of multiple people at the same time can be advantageous; at best, the group stimulates each other's opinions and thus the themes of the discussion will come out in a completely different way than they would in an individual interview (Eskola & Suoranta 1998, 71). Since a group interview is a good tool for exploring "the structure of a micro culture" and the collective values within a group (Hirsjärvi & Hurme 2010, 61-62), it was deemed to be a good choice for this particular project. Getting a discussion out of the whole group could expose some underlying values that are shared as a team. As group interviewing also allows the interviewer to direct questions to individuals within the group (Hirsjärvi & Hurme 2010, 61), it fit this research well with its versatility. A possibility to address individuals and further deepen the view about their thoughts still exists even in group setting. An important aspect was also the time efficiency that would be gained by interviewing multiple persons at once.

#### **4.2.1 Preparing the interview**

The researcher didn't have previous experience as an interviewer, so there were a couple things to keep in mind in order to avoid rookie mistakes. Communication with the interviewee is often a stumbling block. An inexperienced interviewer can lack flexibility, and instead of focusing on the discussion with the interviewee, he/she focuses too much on asking the questions. A moment of silence can stress out the interviewer; he/she can talk too much to avoid quiet moments and thus there is not enough room for the interviewee to think. (Hirsjärvi & Hurme 2010, 124.) It is important to acknowledge these pitfalls beforehand and aim for a relaxed interview with the focus on what the interviewee says rather than following strictly the pre-planned structure and questions.

There are also some things to note about the way questions are drafted and asked. Although the interview questions are not same as the research questions, they should be

derived from them and serve the purpose of the research agenda. The questions should be simple in order to avoid overwhelming the interviewee, a single question is better than multiple questions at once. Yes/no and either/or questions limits the interviewees possibility to respond and even smothers elaborate answers. (Saldaña 2011, 35-37.) The structure should go from easier topics to more complex ones, from general to the particular. The interviewer should avoid asking questions that somehow spoil and bias the later topics for the respondents. (Chrzanowska 2002, 101). The questions that were prepared for this interview can be found attached as appendix 1 and the results will be gone through in chapter 5.

Selecting the sample for this particular interview was not hard. As this is a case study studying a specific company, the sample was to be picked within this organization. The chosen sample was the available employees within the company's Tampere office. This choice wasn't without its problems, as it is recommended that the researcher should not interview his/her acquaintances in order to avoid assumptions and to gather truly new information (Saldaña 2011, 34; Hirsjärvi & Hurme 2010, 72). In this case the researcher interviewed her close colleagues and this could have been avoided f. ex. by doing the interview in Pietarsaari mill site, where the employees were not so close to the researcher but the information could have been as relevant. This unfortunately was not possible due to time restraints.

### **4.3 Analysis**

As it is with the non-conservative nature of qualitative researching, there are many ways to analyse qualitative data and there is no method that would be noticeably superior to any other (Hirsjärvi & Hurme 2010, 136). The most suitable method could be chosen f. ex. based on how well the method generates answers to the research problem or how well it represents the project findings (Saldaña 2011, 89). It is also advised that the method should be decided before information collection; the chosen method can be used as a guideline during interview process (Hirsjärvi & Hurme 2010, 135). However, in the words of Saldaña (2010), a qualitative researcher should have "openness to new ideas within a focused and disciplined work ethic". So although a method is advisable to be chosen in advance, nothing stops the researcher from changing to more suitable methods if the pre-planned methods do not seem to produce the desired information. (Salda-

ña 2011, 65-66, 90.) Also noteworthy is the quote from methodologist Robert Stake (1995, 18): “Good research is not so much about good methods as much as it is about good thinking.” (Saldaña 2011, 90). Thus one should not get restricted by the methods but rather use them to support the natural process of thinking.

Qualitative research differs from quantitative in the sense that the analysis of the material can be started already during the interview. This analysis process continues until the last interpretation is drafted. Eskola and Suoranta (1996) identify a couple of ways to proceed with the process of analysis, and the way deemed most suitable for this project will be introduced here. The first step in this chosen path is to unravel the interview data, in other words transcribe it. After that the transcribed information will be coded and categorized in order to bring out the most important and essential themes. This step works as a ground base for the last step, which is the actual analysing and interpretation. (Hirsjärvi & Hurme 2010, 136, 147).

Starting with transcribing the interview, the most common way of dismantling the acquired material, the researcher will write the interview down and turn it into a text file. The accuracy of the transcription depends on the purpose of the research. In research where language and interaction is of great importance, the interview can be transcribed from word to word, including all pauses and sighs and all aspects of language. In research where language is not at the centre stage, it is recommended to transcribe as much as possible, but the researcher can also choose to transcribe only those parts he/she finds to be of importance. (Saaranen-Kauppinen & Puusniekka 2006, 78-79.) For example in a group interview a complete transcription might not even be possible, thus the researcher should consider what the needed accuracy is in the particular piece of research (Hirsjärvi & Hurme 2010, 140). In this research the focus was on the perception and experience of the interviewees and although these aspects can and are conveyed through language, it was not the main focus. The aim was to find out what the subjects think about the matter at hand; thus selective transcribing was adequate.

After transcribing the interview, the next step is to go through the material in a systematic way and parse the text into parts that are easier to interpret (Eskola & Suoranta 1996, 112-113). This can be done by the means of coding. In transcript coding the researcher marks down components that he/she finds relevant to the research objective, in

other words clarifying and highlighting important content. Coding can be done by using different colors or marks, for example. (Saaranen-Kauppinen & Puusniekka 2006, 81.)

After the material has been coded and organized, it is easier to start to re-arrange and analyze it. The beauty in qualitative researching is it's in versatility; there are many ways to analyze the content and if something doesn't feel fitting, another way can be adapted. After coding, one can for example start categorizing the phenomena that have stood out. Categorizing the material into relevant themes is a good way to analyze research where a practical problem needs resolving. (Eskola & Suoranta 1996, 117.) These categories will then help identify similarities and patterns between the important aspects of the research. While some research stops there, the results might appear flat, and thus the thinking process should be taken a step further towards understanding the material comprehensively. While some argue that codes and categories compress the material, in fact it just broadens it, and the final analysis and interpretation of the processed material will bring out the results of the interview in full. (Hirsjärvi & Hurme 2010, 147, 149-150.)

#### **4.4 Reliability, validity and ethics**

Traditionally reliability and validity are meant to convey the accuracy and replicability of quantitative research. In qualitative research they are defined slightly differently. Saldaña (2011) adopts the views of Lincoln & Guba (1985) in his book; instead of reliability and validity, credibility and trustworthiness should be used. Credibility is how believable a work is. Credibility can be established f. ex. through grounding the results to a trustworthy theory, identifying methods of data collection and analysis or effective and versatile presentation of collected data. Trustworthiness, on the other hand, can be linked to comprehensive explanation of research processes, all the way to the problems faced during the project. Both of these aspects come down to transparency; through transparent presentation one can achieve the trust of the reader and thus, creditability and trustworthiness of research. (Saldaña 2011, 135-136.)

There are several things to take into account when thinking about the ethics of a research. This particular research did not get very personal nor did it gather any specifically sensitive information, thus there were no big ethical problems to be faced. Still,

there are some things all researches should pay attention to. First of all, it should not be mandatory for anyone to participate (Eskola & Suoranta 1998, 69). In the invitation sent to the potential participants the wish for the participation of everyone was expressed and the pros of participating were listed. But it was underlined that no one is forced to attend and it would be perfectly fine to skip the meeting.

The second matter relates to anonymity and trust. If anonymity is promised, it should be delivered. It is not always enough to conceal the names of participant; sometimes they can be identified through other traits. (Eskola & Suoranta 1998, 43-44.) This was a real concern in this research, as the sample was chosen within the small branch where everyone knows each other. Indeed, it was technically possible for f. ex. the management to find out roughly who participated in the interview, but the researcher paid a lot of attention so that no individual opinions voiced could be tracked down to anyone. The researcher assured the participants, that nothing they said in the interview would personally get back at them. The transcriptions were made as anonymous as possible and any part where it was possible to identify someone was not used in the analysis. This research dealt with opinions of the employees, so it is expected that not everyone wants to voice their opinion, especially a negative one, straight to the managements face. But it also didn't deal with overly sensitive information, thus the measures taken here to ensure anonymity were deemed adequate.

## 5 CASE: BILLERUDKORSNÄS FINLAND OY

### 5.1 Case company

BillerudKorsnäs AB (BK) is a Swedish paper manufacturer that focuses on providing sustainable packaging solutions for its customers as one of the market leaders in growing markets (BillerudKorsnäs AB 2015a). The company emerged from the fusion of two paper companies with far reaching history, Billerud and Korsnäs, in late 2012 (BillerudKorsnäs AB 2015b). BK currently operates 8 manufacturing units in Sweden, Finland and UK (BillerudKorsnäs AB 2015c) and has total of 4200 employees globally. BK has an annual turnover of roughly SEK 20 billion. (BillerudKorsnäs AB 2015a.)

BillerudKorsnäs has products in three categories: packaging paper, consumer board and corrugated solution. BK gathers the needs of food and beverage, consumer and luxury, medical and hygiene and industrial industries. The customers are packaging manufacturers, brand owners and large retail and supermarket chains. (BillerudKorsnäs AB 2015d.) Majority of the customers are located in Europe (71%) with growth opportunities being expected in Asian markets, which currently accounts for 17% of net sales.(BillerudKorsnäs AB 2016a, 11). BK's offer is based on three important blocks; customers will get first class packaging materials made from primary fibres, innovative packaging solutions and a network of global partners. This all is based on passion to develop smarter packaging from renewable materials. (BillerudKorsnäs AB 2014.)

BillerudKorsnäs Finland Oy is the fully owned subsidiary of BK, governing Finnish production and its supportive operations. In 2012 Billerud acquired two Finnish packaging paper mills, Pietarsaari and Tervasaari, from UPM (BillerudKorsnäs AB 2012b). They were first operating under Billerud Finland Oy, but later that year, due to the merger, the name was changed to BillerudKorsnäs Finland Oy. In Finland BKF employs currently 180 persons. In addition to Finnish paper mills, BKF has a mill customer service office in Tampere that mainly focuses on production planning and logistics. Pietarsaari mill main products are kraft and sack paper, which gather the needs of food and industrial packaging as well as carrier bags industries. The production capacity is roughly 200 000t / year. (BillerudKorsnäs AB 2012a.)

In 2015 it was decided that Tervasaari mill was to be closed by September 2016 and in June 2016 it was announced that rather than completely closing the machine, it will be moved to Sweden where it will continue production. (BillerudKorsnäs AB 2016b). Due to the upcoming mill closure Tervasaari will not be included in the discussion nor is it presented in the process description.

## **5.2 Case study**

This project started off in spring 2015 by identification of four main processes that would be mapped. These processes were “Processing of customer complaints and quality remarks”, “Production process of trial batches”, “Developing products and production process” and “Produce and deliver”. The latter was chosen to be the main focus for this case study, as the author is part of this process and thus possesses good knowledge of it and had easy access to further resources that were needed to draft a detailed and accurate description of this process. It was the original plan for the author to map the sub processes within this core process, but due to changes in employees involved in the project, the case study focus was shifted to the main process.

This case study consists of two parts: the first part is the produce and deliver –process and explanation on how it was created. The second part of the case study consists of employee interview and the presentation of knowledge gathered from it.

The research interview was held in August 2016. The invitation to the interview was sent out to total of 12 persons in the office, based on who had potential to participate. In the end 8 people were able to attend. The interview was recorded using two mobile phones and was later transcribed from those recordings. The interviewees were made aware that the discussion would be recorded. The meeting started with the introduction of the idea of process mapping, after which the produce and deliver –process map was gone through. Finally the interview was conducted. The interview consisted of three distinguishable themes, which will be explored in detail in chapters 5.2.1 and 5.2.2. The full list of questions (both pre-planned and questions generated during the interview) is attached as appendix 1.

### 5.2.1 The produce and deliver process

The process description was created during autumn 2015 – spring 2016. It was crafted during multiple brain storming sessions, usually attended by the project supervisor, the process owner and the QES manager. Between the sessions, information was gathered by short interviews with people involved with the process, or with other relevant people who possessed the needed knowledge. This gathered information was then reviewed at the brain storming sessions and improvement suggestions were presented. The cross-functional flowchart was drafted first, after which the written description was assembled. The written description is based on consulting firm Innotiimi Oy's process description template, although many aspects of the description were added based on the individual needs of BKF. The process description of the produce and deliver –process is attached as appendix 2, with part of it removed from the public version.

After the process description was finalized, it was presented to the Tampere office employees during the process meeting. After presenting the process, the first part of the interview was conducted. The first interview theme was **opinions about the produce and deliver –process**. The interviewees were asked what they thought about the process description, and if there was any part that they felt was especially useful or if there was anything they would change etc. Even though the discussion ended up being more focused on opinions about processes in general (a theme that will be explored in chapter 5.2.2.), some feedback was given. The feedback that was targeted towards this particular process was mainly positive. The employees, who are part of this process, felt that it was accurate (“this is how the process goes”) and it had nothing that felt unnecessary. They felt that even though everything in the description was something that they already knew, it was all necessary to the process and shouldn't be left out. To them, the process description expressed the basic idea of the process.

Two things were specifically mentioned, one of them being the cross-functional flowchart. To interviewees it was “very clear” and didn't need anything added to it. The second mentioned part was the RASI matrix. This responsibility assignment matrix, designed to clarify who does what, shows effectively activities, roles and responsibilities. R stands for *responsible*, A for *accountable*, S for *supportive* and I for *informed*. (Jeston & Nelis 2006, 172.) This matrix was said to be good, as it clarified the view that

there are multiple people involved in different tasks and it made clearer what everyone is doing. The RASI matrix is attached on page four of appendix 2.

Even though it was mentioned that the description needs nothing added to it, the interviewees expressed that the point of view could be shaped. Currently the description is written more or less from the point of view of mill workers, delivery planners and production planners. This is evident especially in the “interfaces” part of the description. Straight interface to customer is described as “not desirable”, which is true for the roles already mentioned, but not for customer service specialists (CSS). There is one CSS in Tampere office and in general CSS’s have big impact on the work of everyone who is involved in the process. Thus it was wished that the role of CSS could be clarified in the process description. The interviewees were also hoping that all the sub processes would be mapped, should this be done it might be enough to make the CSS’s roles more transparent.

### **5.2.2 Employee survey: opinions on process mapping**

The second part of the interview dealt with **how employees saw processes in general**. The general feeling was that respondents saw potential in introducing process work into BKF. During the interview few dominant issues, which could benefit from the introduction of process thinking, came up.

The first and most often mentioned issue deals with **information**. According to interviewees, the current situation of information flow at BKF could be better. They felt that within their office, everything was going rather smoothly since the communication is easy as everyone sits next to each other (“everything *flows* well within the office”). But they felt that information wise they are isolated from the two most important internal contact groups; the mill workers and customer service specialists. “It has always been a problem, that we sit here by ourselves and the mill and customer service centres are out there somewhere. And they do all sorts of things we have no idea about and vice versa.” It was expressed that even when some uncertainties have been discussed with these contact groups, complete understanding is lacking as “they still come and ask about them again after a while”. They also felt that some processes within the Tampere office, such as warehouse management, can be unclear and that sometimes assumptions are made

regarding the capabilities of different roles (“in logistics, it is assumed that you know how to book orders from whichever market, even when it doesn’t work like that”).

Another problem identified was **responsibilities**. The Tampere office workers feel that even though responsibilities are somewhat defined, they are not followed and thus have become unclear over time. Order allocation volume requests and container bookings were mentioned as examples. In both cases responsibilities have been defined to belong to customer service specialists, but over the time it has become a custom to deal with them in the Tampere office. The responsibilities have just “drifted” to Tampere and the interviewees feel it’s partially because the knowledge about these things is better within Tampere office. The respondents identified waste they believe is direct result of these uncertainties. They felt that there is too much of “examining, double-checking and enquiring”, a lot of issues going around and back and forth between different members. The general feeling was that there’s a lot of this kind of waste, and it’s present mainly when working with customer service specialists.

The interviewees suspected that these problems have some roots in the training of employees. For example, how responsibilities are interpreted depends on who has been trained by whom. When the current customer service mill centre at Tampere started, everything was new to the employees and there was no standardized way of doing things, thus everyone started to work in their own ways. One interviewee commented that some things are done the way they are simply because they have always been done that way.

The respondents believe these issues could be solved or at least improved through processes. They think that if all of the sub-processes within produce and deliver –process would be systematically documented, it could improve the information flow between them and mill workers/customer service specialists. They felt that process descriptions would make their role clearer in the big picture: “Then when you do something, or leave something undone, you would know better how it affects the next step”. One of the interviewees also thought that it would be a good thing if there would be a possibility to check details about different work processes “without having to call an engineer or other responsible person every time you need to know something”. With the help of processes, responsibilities could be made clearer so that the same knowledge would be

shared in all of the offices. The interviewees also thought that it would be easier to train new people if they could use process descriptions as tools.

The interviewees had a few suggestions about further process work. The wish to see sub processes of the produce and deliver –process being mapped was repeated few times during the interview. Warehouse management was another process interviewees hoped to see mapped, seeing as it is important process in their opinion and there was a lack of full understanding of the details of that process. When asked if they see regular process updating as important, the interviewees answered yes and wished to see a regular information sharing session of sorts being introduced in future. They said that it would be great if every now and then there would be a possibility to get together with mill workers and customer service specialist and share each other's experiences and get the chance to ask if there would be anything that could be improved in the daily work.

Despite having overall positive and enthusiastic attitude towards processes, the interviewees also shared some concerns they had. One of the participants was skeptical about how it would be possible to make a description for production planning for example, seeing as it is a very large entirety. Second concern raised was about the project being implemented within BKF only. Although the interviewees admitted there are things that can be improved within BKF, many of their problems are linked to the cooperation with customer service specialists, who are not at the moment part of this project, save for one person. These concerns are addressed in chapter 6.

When asked if the interviewees see active employee involvement in the process mapping phase as important, the answer was yes. They felt that if the process would be mapped by an outsider, it would be impossible to get a completely accurate description. One participant commented on the subject in the following way: "If processes are to be mapped, there must be involvement from people who know the process in practice and who are involved in the process. Otherwise the process description will easily become ambiguous and it will not represent how the work is really done." They also felt that this shouldn't just be a project for managers only, as it is also in managements' best interests if employees can have influence in processes.

This worked as a transition to the last interview topic, which was **current possibilities in process improvement**. The object was to find out how employees feel about their

possibilities to influence process improvement and if these process descriptions could be of help in this work. BKF encourages people to eliminate waste through small, daily improvement and has a specific program, called SAMPO, to support this agenda. Many of the employees have received basic training in using Lean Six Sigma tools, such as fishbone structure, 5x why etc., and thus they possess the needed knowledge to affect some aspects of their own work. However, when asked how they feel about their current improvement possibilities, the answer was that in practice the possibilities to influence one's own work are lacking.

The main problem identified was that workers in Tampere office feel disconnected from the decision makers in Sweden. Interviewees said that even though they try to give feedback, the response they usually get is "this is how it's always been done". The trucking company used in Finland was mentioned as an example. The delivery planners have had numerous problems with the current company and despite numerous attempts to give feedback that using another company should be considered, they have always been turned down. The interviewees felt that there is no way to influence big decisions that affect their daily work.

The interviewees did not feel that processes could change this situation dramatically. What they were hoping for was better communication and transparency between them and the managers. Currently the communication between Tampere office and managers in Sweden is done through Tampere customer service manager and the interviewees expressed a wish to hear more about the communication and decision making between these two parties. At the moment they rarely are aware when something is being discussed about, and generally have no idea about the topics and decisions.

A second wish was to see the situation with Finnish logistics decision making get better. They feel that so far the people who have been in charge of Finnish logistics, Swedish managers who have had other responsibilities as well, have seen this area as "a necessary evil" that has had to be done. The responsible persons have changed often within the few years and the Finnish deliver planners have felt that the support they receive from that role is not good ("Every time you ask something from Sweden, the issue is being tossed back and forth and it feels like there is no real appointed person who could answer"). The interviewees felt that they would need a clearly defined person to be responsible for Finnish logistics processes, who would have the needed knowledge and

expertise, the power to change things, and most importantly, who would have genuine interest towards this area.

Nevertheless, the interviewees did not completely reject the idea of using processes in improvement work. They were positive that processes could help them improve smaller daily problems that they face, but it would be possible only if BKF truly commits to the project and regular updating of process descriptions. “They will be of use only if there will be a possibility to change them, so that no one will be saying: this is how it says in the process description, this is how we will do it then forever”.

## 6 CONCLUSIONS

Looking back at the research questions, presented in chapter 1.2, it can be said that the theory overview together with the interview results sufficiently deliver answers. The first research question was: “What is the current state of produce and deliver - process?” As planned, the process was mapped “as-is”. Based on the answers of the interviewees, this particular process description was accurate and informative and there was no problem with the content of the process. The interviewees noted that in reality the process flows as described and they had no issues with it. BKF can thus safely map other process in similar format as well.

Some lessons can be learned from the process mapping journey so far, as this produce and deliver –process description was not created without problems. First of all, it is clear that it took too long to map out this process. One of the reasons was that processes were relatively new concept to the researcher. It took time to get familiarized with the whole idea and then on how to effectively map the processes. But even bigger problem than that was the time. Since there was no time allocated for this project, the author had to work on it whenever she had time from her regular work and that proved to be difficult at times. This can be easily resolved if whoever will be continuing the mapping process will be able to set some time aside just for working on this project.

There should also be a clear plan on what will be mapped, with what schedule and who will be involved. In this project the plan was not very strict at times and people who were involved where not always able to fully participate due to other responsibilities. If the processes can be drafted systematically in a timely manner, using the knowledge and expertise of members who are fully informed about the goals and who are genuinely motivated, BKF will be able to establish a network of tools that will benefit everyone in the company.

The second research question was “How can BillerudKorsnäs Finland Oy use process descriptions as an aid in daily work as well as in improvement work?” Through the research interview, it was possible to shed light on the current issues at Tampere office as well as give a glimpse of how employees feel about processes. Judging from the interview, it can be said that BKF suffers from some of the signature problems of a functional organization, such as communication boundaries between different departments and

lack of knowledge regarding responsibilities. These are problems that can be addressed through process thinking: as explained in chapter 2.3, process mapping is a communication method that gathers information and makes it shareable. Process maps turn vague ideas and assumptions into knowledge and make it possible for an organization to achieve shared understanding. (Andersen et al. 2008, 3-4.)

Based on the theory, it is clear that processes could improve the flow of daily work at BKF. Setting a regularly updated system of processes could reduce the barriers between internal stakeholders. Workers could better identify their input in the whole process and understand how their work is connected to everyone else. The information flow could be improved and responsibilities better defined without the fear of tasks “drifting” back and forth. The waste identified by Tampere workers could be effectively tackled and eventually diminished. Proper process descriptions would also help in training and prevent tasks being done in different ways just because employees have had different trainers. Through processes, shared understanding can be achieved throughout the different departments. Eventually, if processes are taken seriously, BKF would be able to enjoy the benefits of a truly standardized business culture where everyone is on the same page, working towards the same goal. It is recommended, that BKF maps the sub-processes of the produce and deliver –process in the near future.

Better improvement through processes can be harder to achieve. The biggest obstacles Tampere office workers experience cannot be overcome through BKF’s internal process project. BKF should find a way to make the communication between Tampere office workers and managers in Sweden better in order to advance the possibilities for workers to improve their own work. As stated in chapter 3.4, potential ideas should be addressed and feedback taken seriously, otherwise successful implementation of improvement culture is jeopardized (Andersen 2007, 104). But even though there are larger issues in implementing improvement, it doesn’t mean that processes cannot be utilized at all. The interviewees agreed that they could be of help in daily problems and in improving their ways of working. They expressed the wish to hold meetings with workers from other areas of the process in order to exchange improvement ideas and streamline their work. Perhaps these kinds of best practice meetings can be arranged as a part of the annual process audits and tied as part of the SAMPO program.

The reception to processes was not without any concerns. The first concern expressed was how comprehensive entireties, such as production planning, can effectively be compressed to process descriptions without ignoring important information. As explained earlier in chapter 2.3, process maps should include critical aspects of a process, and thus BKF has to make a differentiation of important and less important steps of any process that will be mapped. It is inevitable that some information cannot be included in the process description, but these maps are not meant to be pedantic instructions in any case. The second concern was that this project includes only BKF. Many of the issues experienced have straight connection to customer service specialists working in different customer service centers around the world. Even if it's not possible to broaden these processes to concern customer service centers abroad, based on the interview results it would be beneficial to the company if there would be active, ongoing efforts to improve the cooperation between CSSs and production planners and delivery planners.

It is clear that BKF can highly benefit from processes. Instead of using processes as tools meant just for managers, they should be incorporated into the company culture. In order to do that there are some aspects that should be considered in the further process work. First of all, processes need proper governance: they should be taken seriously and there must be proper commitment to them. There should be time allocated for the making of the process maps and a proper schedule created for process audits. Everyone involved should be interested about the processes. Different appointed roles, such as the role of a process owner, should never be just nominal ones. The second thing to consider is proper education, as explained in chapter 2.2.1. Processes cannot be truly incorporated into the company if employees and managers are not educated about it. Education does not mean brief fact briefing, but training people to master skills with which they can put processes into concrete use.

And finally, BKF should broaden this project so that it would concern employees already in the mapping phase. So far BKF has not actively included employees from the processes in the project; it has been in the hands of few people. Based on the research results, this should be changed. It is a danger that BKF will not be able to truly benefit from process thinking if implementing the project is kept only in the hands of management, at worst it will only arouse resistance from the workers. Seeing as the employees are reacting to processes positively and have expressed the willingness to take part in

mapping, this kind of enthusiasm should be harnessed. As stated in chapter 2.2.1, active involvement will eventually result in commitment (Mertens et al. 2014, 536-537).

This research was successful, as it gave valuable information about current problems and process use possibilities. However, it must be remembered that these results are rather narrow, and not all inclusive. As the workers at Tampere office deal with very different tasks compared to mill workers, the problems experienced are bound to be different. But if Tampere office feels that their work could be improved through better communication to other stakeholders, it could be the same thing vice versa. More research should be conducted in Pietarsaari mill as well, but at least for production planners and delivery planners processes could be just the tool they need to get rid of some issues hindering their work.

Based on the findings of this study, it is clear that there is potential in utilizing process thinking, even if the intention is not to shift to fully process based management. Using processes as tools can yield improved performance in communication and cooperation between stakeholders, training and waste elimination to name few examples. But even when the goal is not to change the management structure of the company, it is important that processes are given appropriate attention and the framework for complete cultural change is nurtured. Without proper planning, educating and real commitment it is impossible to fully benefit from the many gains of process mindset.

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## APPENDICES

### Appendix 1. Interview questions

#### THEME 1: THE PRODUCE AND DELIVER –PROCESS DESCRIPTION

- What did you think about this process description?
- How well does the process description correspond to the actual process? Did you recognize yourself from the description?
- What was the most useful part of the description?
- If processes are to be mapped in the future, what things would you specifically like to see given attention to?
- Was there anything unnecessary or self-evident in the process description?
- How would you improve the process description?

#### THEME 2: PROCESSES IN GENERAL

- Should other processes be mapped in a similar way?
- What processes would be important to map? Why?
- In what way would you think you would benefit from these process descriptions?
- Would you like to participate in the mapping and maintaining of these processes?
- How important do you think maintaining process descriptions is?
- How important do you think including employees in the process work is?

#### THEME 3: PROCESS IMPROVEMENT

- How do you feel about your possibilities to participate in the improvement of your own work processes? Do you feel you have influence?
- What are the biggest obstacles to your process improvement possibilities?
- In what way would you like to see your possibilities for improvement to be advanced?
- Do you think these process descriptions can be of help in process improvement?

## Appendix 2. The produce and deliver process description

1 (7)

*This process description is based on Innotiimi Oy template.***PRODUCE AND DELIVER**

Process owner: xxx

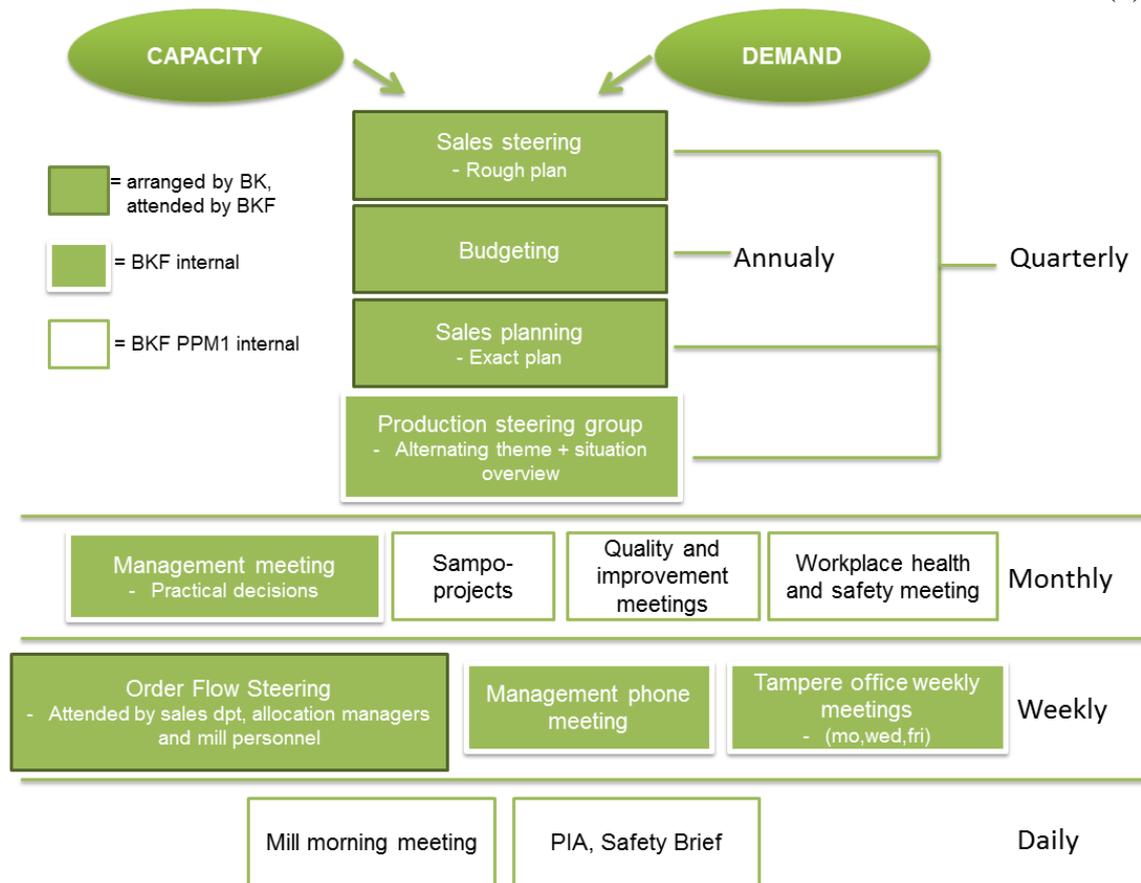
Members of process improvement team: xxx

Accepted by: xxx

**1. Area of appliance**

- **What is the process applied to and what is left outside?**
- Process is applied to BKF's operation, which have to do with handling, producing and delivering of customer order
- Central interfaces are:
  - Customer service centers
  - Logistic services
  - Customers in exceptions (not encouraged, excl. CSS's)
- **Where does the customers' process start from and where does it end?**
- Customers' process starts from the need of a product and/or service.
- Customers' process ends in the receiving of a product and/or service and paying of the invoice.
- **How the process operation is planned and how is it effectiveness evaluated?**
- Operation is planned through annual budget. Inputs are reserved based on the budget. (responsibility: BK)
- The annual budget is evaluated every quarter year. (responsibility: BK)
- The operation in practice is planned within BKF.
- Meeting practices:

(continues)



- Effectiveness is evaluated against other mills (benchmarking) and by comparing to the budget.
  - o Production efficiency (actualized vs. planned), efficiency coefficients, continuous evaluation
  - o Logistic expenses
  - o Customer satisfaction → customer complaints (flawless processing, product quality, delivery damages, delivery reliability (OTIF))

## 2. Customers, their needs and requirements

- **Who are the customers and stakeholders of this process?**
- The customer of the process is the customer of BKF.
- Internal stakeholders are the members of customer service –team, warehouse personnel as well as production teams and other officials related to production
- External stakeholders are transportation companies and different external warehouses.

*Part of chapter 2 is confidential and will not be published.*

### 3. Objective

- **What is the purpose of the process (aim, task, mission) and how is the implementation measured?**
- The main objective is to satisfy the need of a customer.

Objective	Meter	Unit of measurement (€, pcs, %..)
The quick and flawless entering and handling of an order	<ul style="list-style-type: none"> <li>- Complains caused by order handling</li> <li>- Time it takes to confirm an order</li> </ul>	<ul style="list-style-type: none"> <li>- EUR/ton</li> <li>- hours</li> </ul>
Producing an order in time	<ul style="list-style-type: none"> <li>- Keeping the ex-mill date</li> </ul>	<ul style="list-style-type: none"> <li>- % of the orders</li> </ul>
Flawless quality	<ul style="list-style-type: none"> <li>- Complaint expenses</li> </ul>	<ul style="list-style-type: none"> <li>- EUR/ton</li> </ul>
Delivery in promised time	<ul style="list-style-type: none"> <li>- OTIF</li> </ul>	<ul style="list-style-type: none"> <li>- % (not developed yet)</li> </ul>

- It is also an object to keep within given budget (= to satisfy the need of an internal customer), which is why production expenses are also monitored.

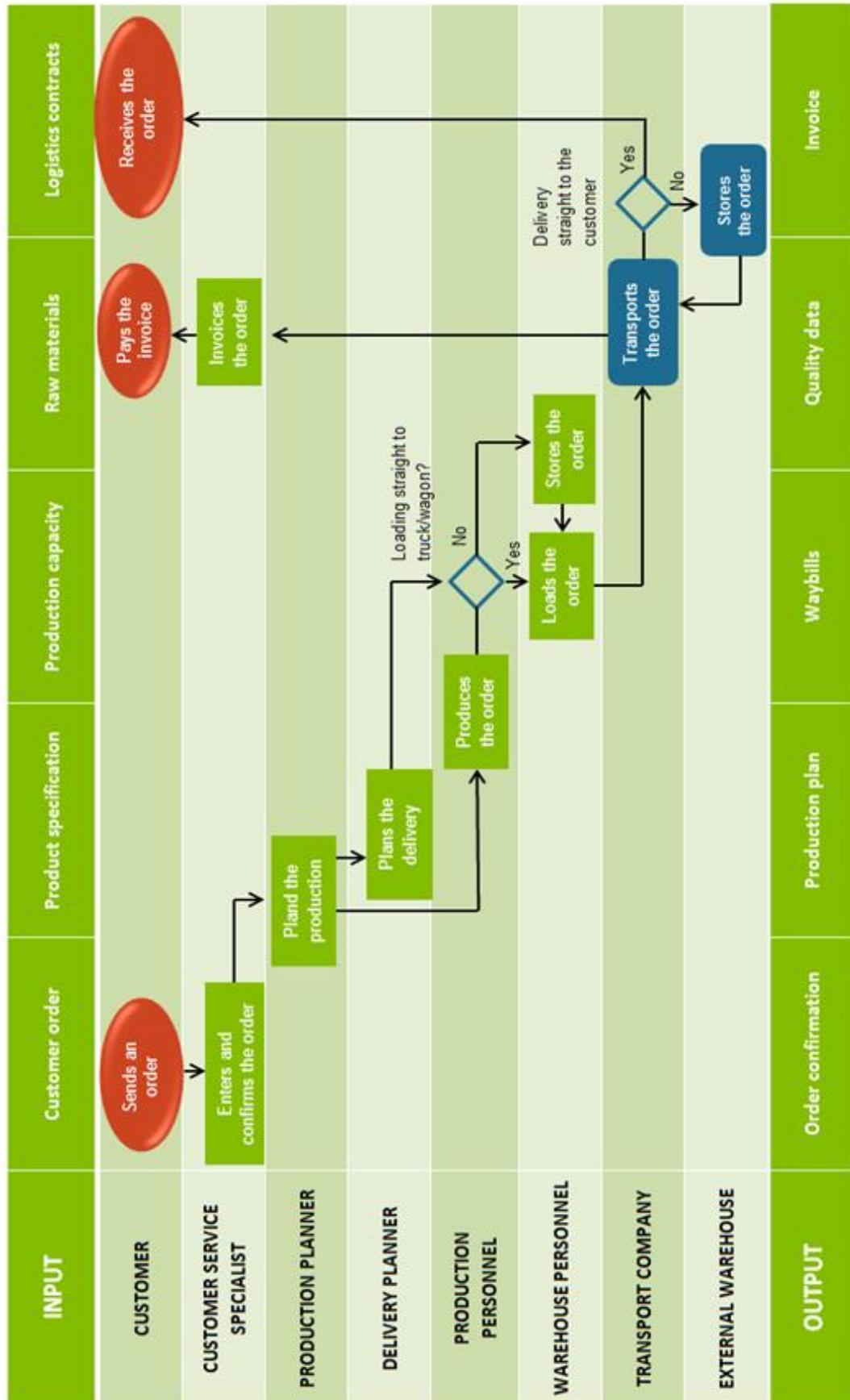
#### 4. Inputs and outputs

- What are the inputs and outputs of the process and how are they kept and administrated?

What are the inputs?	Description, examples	System	Responsible	Preservation
Customer order	PDF-file/EDI from the customer	BonD, archives	Customer Service Center	7 years
Product specification	Quality specification	TIPS	Technical Service Manager	1y 4mm
Production capacity	Budgeted production capacity (production capability)	TIPS	Site Manager	N/A
Raw materials	Dosage instructions	TIPS, IFS	Site Manager	1y 4mm
Logistics contracts		Tempstore, archives	BK Logistics	N/A

What are the outputs?	Description, examples	System	Responsible	Preservation
Order confirmation	Confirmation to the customer through EDI	BonD	Customer Service Center	7 years
Production plan		TIPS	Site Manager	N/A
Waybills	Waybills of departing trains and trucks (excl. Walki Pietarsaari, waybills are not archived)	BonD, archives	BK logistics	6 years
Quality data	Quality data of produced paper	TIPS	Site Manager	1y 4mm
Invoice	Customer invoice	BonD	Customer Service Center	7 years

5. Process map

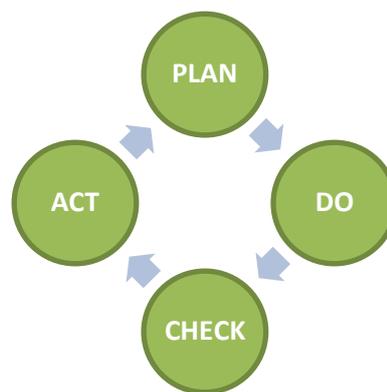


## 6. Responsibilities

- RASI-matrix: (see next page)
  - R: Responsible
  - A: Accountable
  - S: Supportive
  - I: Informed

## 7. Evaluating and improving the process

- Process audits 1-2 times per year, aiming to find out:
  - The fluency of the processes
  - Relevancy of the meters
  - Improvement of results
- An improvement plan is designed based on the audit results.
  - The PDCA-cycle:



Tasks	CSS	Production planner	Delivery planner	Manager Customer Service	Production personnel	Quality control engineers	Site manager	Loaders	Warehouse foreman	Decisions (additional information, boundaries, hyperlinks)
Entering an order	R	S, I		A						- Boundaries from the sales budget
Confirming the order	S, I	R		A						- Boundaries from the sales budget
Invoicing	R			A						
Communication to the customers in order related issues	R	S, I	S, I	A						
Composing the production plan	I	R	I	A						- Boundaries from production capacity
Communication to the CSSs in production matters		R	S, I	A						
Planning the delivery	I	S	R	A						- Logistics contracts
Ensuring the order arrives to its destination	S		R	A						
Communication to the CSSs in delivery matters	I		R	A						
Producing the order		I			R		A			- Boundaries from the production plan
Ensuring the quality					R	R	A			
Production expenses							R A			- Production capability of the machine
Storing and dispatching the order	I, S		S					R	A	