



Operational Performance Through Business Process Management

Case organization

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ABSTRACT

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This study examines operational performance improvement through business process management methods and the importance of process management for operational efficiency.

This study was conducted as a case study for a large heavy machinery manufacturer in Finland. The purpose of this study was to analyze the case organization's business unit operations and to map and improve the operational model.

The theoretical part of this study examines the business process maturity model, management, modeling and development. In addition, the theoretical part is based on relevant and recent business process management literature and scientific articles.

Theme interview was used as the research method for this qualitative study. The data was gathered from all key personnel inside the process to get a good overall view of the situation. After the interviews, the first process maps were formed, and some operational improvements were implemented.

The results show that a process-oriented organization can develop its operational efficiency quickly by implementing methods of business process management. The first steps of the process development and management methods will increase the efficiency in the operations and the increase will be cumulative when the development is taken further. Some improvements to the operational model were implemented during the thesis, such as quality audit in one of the operational sites and new ERP-features in two locations.

Keywords: Business process development, business process management, business process maturity model, process modeling

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ABBREVIATIONS AND TERMS

BPM= Business process management

CRM=Customer relationship management

ERP= Enterprise resource planning

PM= Process mapping

PS=Process standardisation

CV=Customer value

OP= Operational performance

KPI= Key performance indicator

BU= Business unit

BMM= Business maturity model

RFQ= Request for quotation

SWOT= Strengths, weaknesses, opportunities and threats

EXW= Ex-Works incoterm

PO= Purchase order

BoM= Bill of material

1 INTRODUCTION

The modern business environment is changing rapidly through the new innovations of the information technology and different data services. These new innovations such as internet of things, fast wireless networks and cloud-based services influence all levels of business operations from manufacturing and logistics to customer service and sales. (Sandhu & Gunasekaran 2004, 673-674.)

This development and globalization have led to a stronger competition on costs, lead times, responsiveness and adaptability of the organizations. Also, customer requirements for response times, service level and various web or cloud-based databases and services has increased. This complexity has increased the need for efficient management of organizations and the trend of management is moving from traditional functional organizations towards more horizontal view of organizations and flow-oriented management. (Margherita 2014, 642.)

All this creates challenges for the companies and organizations but also shows new possibilities to gain competitive advantage by completing physical goods with efficient adaptation to new customer needs and service requirements with new kind of information services, for example those related to maintenance or remote operations possibilities. Also, modern flow and process-oriented management style combined with modern IT-solutions can improve overall efficiency and through that customer satisfaction.

The goal of this thesis is to map and analyze the case organization and its processes by using the results and perspectives of the study in helping to improve its operational model to meet the standards of these modern requirements. In addition, the aim is to implement best practices of business process management to the organization. The purpose is not to add more complex operation models but to streamline and simplify the operations by recognizing the key processes which create the customer value and bring those facts to the focus of the organization. The goals of this process management and development are to create more customer value, improve financial result, further enhance customer satisfaction, improve overall efficiency and through that improve and support employee proactivity.

2 BACKGROUND AND OBJECTIVES

2.1 Case company

The case company manufactures complex machinery and the company has personnel and operations across the globe. The company can be considered one of the largest in its field of business.

The case organization provides update and upgrade kits for heavy machinery. These kits have three levels of customisation. The range goes from standard offering, which is general update or modification, to certain range of units up to engineered kits which are designed to fit a certain unit. They are not tailor made but they are engineered to the certain specification of unit. The most tailored solutions are custom engineered kits which are specifically made for special customers' requirements. These upgrade kits are offered to various types of machines from different model years, so the offering is very broad and complex which adds a lot of variation for the daily operations, especially for the product engineers.

The case organization has operations in three different locations. Two of them, site A and site B, are in Finland, and the third one is located abroad which is called in this thesis as a site C. The total number of personnel in the organization is 12. Four of them are in location A, two are working in location B and six in location C.

The small size of the organization has its advantages from process development perspective, as all the key personnel are easy to get involved in to the development processes. However, as the organization is an internal customer inside the production unit where it operates in, some challenges at the borders of organizations sometimes occur. As for example, the production unit does not see the kits as important as manufacturing new complete units.

The writer of this thesis has been working inside the organization as an Order Desk Specialist from the beginning of 2019. In this position the researcher is involved in administrative tasks for all three sites and is working as a part of the

order to delivery process for A and B sites. This ensures that the writer has a profound overall view of the whole operation.

2.2 Research topic and the research question

The goal of this thesis is to analyze the case organization, map its processes to improve its operational model and then meet and exceed the customer standards and requirements. The main research questions are:

- 1. How to improve operational efficiency through business process management in the case organization?
- 2. How to increase customer value through business process management?

2.3 Choosing the topic

The case organization is growing quickly due to strong demand in the market, and currently the need for improvements in operational efficiency starts to arise when the amount of sales and total volume is growing. All this makes this thesis very current and relevant for the organization in question. Currently the organization has no mapped processes in place and operations have formed to their current form by slowly growing and adapting to the needs and tasks in hand. The organization in question operates in three different locations with different ways of working. This makes the operations very people oriented and if some key personnel are missing the efficiency and customer service can suffer greatly.

2.4 The purpose of this thesis

The purpose is not to introduce more complex operation models but to streamline, simplify and unify the operations by recognizing the key processes and bring them to the focus of the organization. The goals of this process management and development is to create more customer value through faster response times, improved request handling process, better lead-time estimations, better overall service and taking better into account customers special needs of the customers. This improvement in efficiency and customer satisfaction will improve sales and, in the end, financial results. It will also give the management better overall view

of the organization's operations and the available resources can be led towards further development.

2.5 Structure of the thesis

The theoretical framework of this thesis proceeds from general business processes to business process management (BPM) and eventually to business process mapping and development. After this the theme interview results are discussed, and new process maps formed during the research. From there the thesis moves on to answer the research questions and then after that to produce the suggestions of the new operational model and process model.



Figure 1. Thesis structure (Mäkinen, T. 2019.)

3 Business process management

Business process is chain of actions that always have internal or external customer in both ends. Internal customer means a customer that is associated inside the company, for example exports organization can be a customer of trade finance organization as the trade finance organization provides finance and legal consultation to the export organization. External customers are not associated with the company, so they can be for instance the consumers of the final product. (Laamanen 2001,19-22.)

The need for business process management has increased throughout the complex requirements of modern business environment where the competition on costs, lead-times, responsiveness and adaptability to customer need are a strong competitive advantage. (Caputo, Fiorentino, Garzella 2019, 391) A business process differentiates from a project in a way that a project is onetime event with a beginning and an ending. Process is an ongoing activity, for example building a house is a project but house building is a process (Laamanen 2001,19-22). This chapter defines different business processes, how they should be managed, mapped and developed. At the end of the chapter different challenges in process management will be discussed.

Margherita (2014, 643) defined business process management as a relatively old business management practice which is based on Michael Porter's value chain theory introduced already in 1985. According to Porter (1985, 37) the business should be led systematically as a chain of activities creating value for the customer. Customer value is a feature of the product that the customer is willing to pay. It can be for example the quality of the product, good value for money of the product or fast delivery time. In this value chain all the operations have an input and an output and either internal or external customer. (Klun & Trkman 2018, 786-788; Porter 1985, 37) Kothari & Lackner (2006, 245.) divide the customer value to different parts that create the customer value experience. The customer value experience is the combination of basic customer value characteristics as shown in figure 2 on page 10.

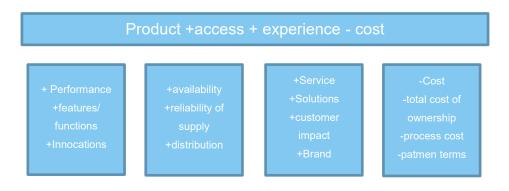


Figure 2. Customer value characteristics (Kothari & Lackner 2006, 245.)

The customer value experience means how the customer experiences the overall service and value they get from the supplier. According to Kothari and Lackner (2006, 245) the companies that take the experience factor to the basic customer value equation see higher margins and overall profitability.

In BPM this value chain or organization is ideally lead horizontally through the key processes of the organization with the purpose of continuously to improve and streamline the process. The main emphasis is in efficient communication between the parties involved and maximizing the flow of information and materials through the process while reducing or removing all wasteful non-customer value adding activities from the process (Klun & Trkman 2018, 786-789.)

Van Assen (2017, 451-454) found out in his study that by mapping, standardizing and continuously improving, implementing and adhering to systems of processes will eventually result in operational performance. This holistic approach also improves overall process orientation inside the organization as the employee commitment will increase as the overall picture and importance of individual tasks come clearer to the employees. This in return will improve the overall efficiency of the organization and will increase the operational performance and customer satisfaction. (Van Assen 2017, 451-454.)

Caputo, Fiorentino and Garzella (2019, 391-397) also found out in their study that modern business process management points out that the importance between of information flow between different the parties in the process has been increased due to more complex business environments and due to the fact that BPM is moving towards boundary management. Boundary management means

the management of different parties from inside and outside of the organization and how to turn this to competitive advantage. (Caputo, Fiorentino and Garzella 2019, 391-397.)

In the case organization these requirements for boundary management can be seen in the daily operations as the case organization is operating in very complex business environments and serving various sales companies across the globe. The role of the case organization is to be the link of communication between the production and Sales area and communicate how the process is progressing.

3.1 Business process maturity model

The business process maturity model is a concept where the level of process orientation in an organization is defined by the level of business process management and by standardized processes the organization has implemented. In this concept they must define which stage they are on at the maturity model and then decide the next step on how to implement and achieve next level in the model. The goal is to thrive in process excellence to improve operational efficiency. (Kahrovic & Vignjevic-Dorcevic 2018, 70.)

Figure 3 on page 14 points out the different stages and the developments needed to increase the maturity of the BPM. The starting point is a stage where the need for development is noticed as the structure of the work is not coordinated efficiently. Typical characteristics for this level of process orientation is a very reactive approach to customer needs, a lot of individual efforts and a very person dependent operational model with lots of manual work and work arounds. (Kahrovic & Vignjevic-Dorcevic, 2018, 72.) The first stage of the maturity model is process awareness where the organization maps its first processes and increases the awareness of process management needs in the organization. The main purpose is to start to implement BPM practices to the organization and add ownership for the main processes. (Kahrovic & Vignjevic-Dorcevic 2018, 72.)

In the second and third stages of maturity level the organization starts to optimize and gain advantages from the business process management. In this stage the organization is able to align its business processes with the market strategy to gain competitive edge and increase customer value. Also, automation of manual work phases is common with improved communication methods and server-based applications. (Kahrovic & Vignjevic-Dorcevic, 2018, 73.)

In the final stages of business process maturity model the organization has reached a high level of process maturity where the process orientation has been strictly attached to the core of operations and strategy management. The workflows and ways of working have been standardized and the organization is agile to react to market changes and new customer needs. The organization also can extend this operational approach to link it with suppliers, customers and other stakeholders in the process. (Kahrovic & Vignjevic-Dorcevic, 2018, 73.)

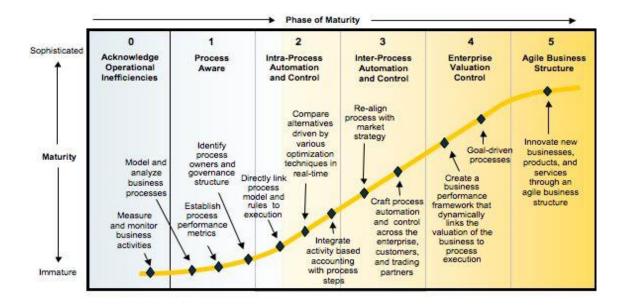


Figure 3. Business process maturity model. (Melenovsky & Sinur 2006.)

3.2 Different business processes

Business processes can be divided in various categories but in this thesis, three main categories are used due to the small scale of the case organization. This relatively small scale means that the case organization is generally internal customer for supporting processes inside the case company. The three main categories are key processes which create the customer value, support processes which are internal processes that support the key processes and management processes which oversee the operational processes. (Laamanen 2001,54.)

Key processes are processes that serve the customer needs directly and are the core competence of the company which produces the customer value. These processes can be for example: marketing, product development, Order-to-Delivery (Order-to-Delivery) process or customer service. (Laamanen 2001, 56; Lecklin 2006, 130.) Overall these key processes deliver the business result and have the impact on the organizations success. The key processes of the case organization could be: the upgrade engineering process, Order-to-Delivery process and Customer Relationship Management (CRM), as these processes are directly related to customer value. The upgrade engineering process creates value to customer as the special needs for modification in customers equipment are identified and tailored solution is offered. The Order-to-Delivery process creates customer value through short lead time and cost-efficient delivery from the production to customer. The CRM process aims for efficient customer communication trough web portals and email where the information is shared as efficiently as possible.

Support processes are company's internal processes that are not directly linked to the end customer and their purpose is to support the key processes and ensure their function. These processes could be human resource management, finance department, facility and machinery maintenance and IT-services. (Laamanen 2001, 57; Lecklin 2006, 130.) Management processes are considered to be the processes that lead the organization towards its long-term goals and they overseeing operational processes including corporate governance, budget processes and personnel oversight. (Laamanen 2001, 56; Lecklin 2006, 130.)

3.2.1 Business processes and organization

Human resources can be considered the key ingredient for the success of the organization as the characteristics, abilities and motivation of the employees are unique. Other parts of the process, such as the methods, equipment, machinery and characteristics of the services are relatively easy to copy but the competence of the personnel is the foundation of the long-term success of the organization. Management of personnel includes practices where these personnel characteristics are led in the way that the results of the organization are met as good as possible. (Laamanen & Tinnilä 2009, 39.)

Van Assen (2017, 451-454) explains that the process orientation of the staff is important to every organization and it has a straight impact on operational performance and customer focused performance as all employees understand their impact and value in the big picture. Van Assen also points out in his study that this performance increases cumulatively when process mapping and process standardization are in place. The results also showed that the process thinking by the employees is necessary for process mapping, process standardization and continuous improvement to work. (Van Assen 2017, 453.)

A process-based organization can be challenging to implement as it is a large transition from a traditional functional organization. The transition from matrix organization however is not as extensive as the matrix organization is already aligned and more horizontal. The challenge in these transitions is that the change will require the whole organization and it requires changes in employee attitudes, beliefs, assumptions and the management style need to be aligned to the new model as well. (Margherita 2014, 644, 653.)

The benefits from these organizational developments however makes the transition from lower to higher maturity level easier. This process-oriented model can be used in different projects also because a project as a one-time event can be also be thought of as a chain of small processes and the parts of the project can be given to individuals who have certain expertise in the key process. (Margherita 2014, 644, 658.)

Process orientation and openness to process management is important for the case organization when the needed developments are made. The more open the organization is to change and develop its operations, the easier the transition will be. All of the key personnel from the case organization are therefore needed to participate to the development. As Van Assen (2017, 451-454) explains, people are more motivated when they are included in the decision making and they understand the value they bring to the process.

3.3 Business process modelling

As Margherita (2014, 649) explains, business process modelling is a system where processes are designed, addressed and shared. The business process modelling system shows the activities and architecture of a company with four main components: value chain, stake holders, process models and roles and governance. These models are the back bone of the operations and they provide overall view of all operations and actions for the products or services the company provides to the market. (Margherita 2014, 649.)

business process map also shows different personnel roles inside the process. There are process sponsors who support the development, process owners who are responsible of the process' day to day operation and continuous development. Then there are regular employees, who work inside the process, whose insight and input for development are necessary. There can also be various managerial and IT-responsible roles inside the process, but this is not always the case. These process personnel are added to the process maps to distribute the responsibilities inside the processes. (Margherita 2014, 649.)

Business process model is a visualization of these business processes and it presents them in a pragmatic and simplified way. There are different levels of process mapping and they start from a strategic overall view and go deeper to key processes, sub processes and then to work descriptions. (Krogstie 2013, 3-10.)

As Krogstie (2013, 3-10) explains, the business process modelling is usually done in organizational setting and it represents the current state or the wanted future

state of the process. The model includes the current state of the process, organization and computer systems related to it. These process models can be used for various purposes:

- 1. Helping employees understand the current situation of the organization and how it works
- 2. Helping the employees to communicate inside the process
- 3. To use computer assisted analysis for process development
- 4. To ensure the organization acts as required for certified process standard for instance ISO-9001
- Deployment of new process model, where people can act based on process maps
- To provide help for traditional development process where the process maps are analysed, and new process maps present the wanted future state of the process, including the requirements, and to work as foundation for development.

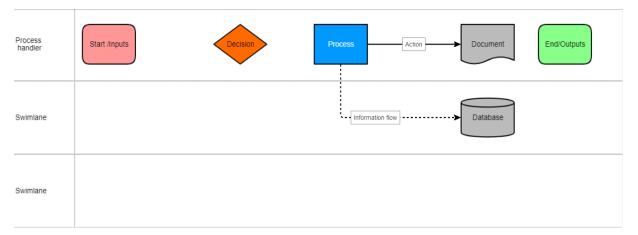


Figure 4. Process map template. (Mäkinen, T. 2019.)

There are various styles and types of process modelling but in this thesis the focus is on the case company's style of process modelling. The model represents different organizations, departments or individuals as the swim lanes. The map in figure 4 presents the persons or departments that are responsible of different phases and the different decisions that are made in the process. Under the blue process actions a sub processes and workflows can be added. The databases represent different software's and databases that are linked into the process.

3.4 Business process development

Business process development is an activity about improving the way of working by identifying and analysing operations. The goal is to improve the use of different resources which include materials, time, labour or money. The need for the development usually arises from customer needs or from different key performance indicators which can be for instance lead time, cost, waiting time and cycle time which refers to is the time between customer request and completion of process. (Margherita 2014, 649-655.)

As Andersen (2007, 3) also explains the business processes can be developed for internal or external needs but the development is necessary as the processes tends to deteriorate over time. Even if the process would keep its current level, the customer expectations change nowadays rapidly, or the competition can improve their processes which again arises the need for development. This is shown in figure 5.

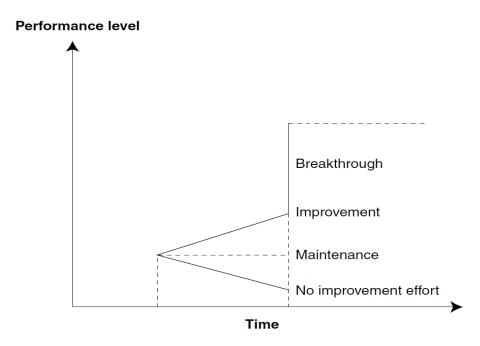


Figure 5. Business process development needs. (Andersen 2007, 3.)

A process can be kept up to date with continuous development which means the process is reviewed regularly and small improvements are implemented likewise regularly to the process. This keeps the employees open towards developing the

operations and it helps to implement the bigger overhauls of the process once they are needed. If developments are not made the process tends to deteriorate over time. (Andersen 2007, 4) The basic way of business process development is to map the current status of the process and the wanted status of the process. The needs for the future process can be addressed by different analysis or feedback gained from the market or from the key performance indicators (KPIs) of the process. (Andersen 2007, 4.)

The process can be analysed various ways. This thesis analyses the processes in a combination of competitive force analysis and SWOT-analysis. SWOT analysis aims to recognize the strengths, weaknesses, opportunities and threats. In Swot analysis the organization or a company is reflected against internal and external factors. The strengths are the factors that the company should utilize and enforce, weaknesses are the factors that the company should avoid or remove, opportunities are factors which the organization should exploit, and threats are the factors which the organization should try to eliminate. (Investopedia 2019.) This analysis can be utilized in various assessments and in this case study it is used to see how the organization positions itself in the market.

Andersen (2007, 20–22) defines competitive forces as

- 1. Competitors that can gain market share from the organization in form of new pricing, new products or improved service level.
- 2. Buyers' bargaining power which means the buyers has a possibility to have better terms from competition.
- 3. Supplier bargaining power which can increase the purchase prices for the organization.
- 4. Threat of new entrants entering the market and reducing the market share of the organization.
- Threat of substitute products that can substitute the organizations products.

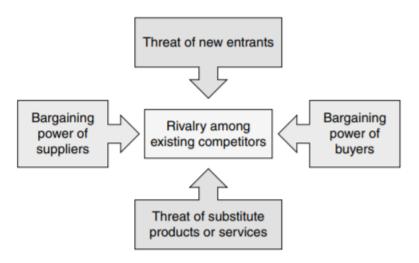


Figure 6. Competitive force analysis. (Andersen 2007, 22.)

These different factors shown in figure 6 can be the impulses from the market which initiate the process improvement needs in the case organization. The competitive force analysis can be used in the case organization to analyse the organizations position compared to its competition so the case organization can adjust its operations accordingly.

According to Andersen (2007, 20), when the needs for improvement have been detected a development roadmap will be generated. The purpose of improvement road map is to determine the resources and activities for the improvement which are:

- 1. The strategy of the organization to determine what is the most important part of the development and where the organization needs to focus.
- 2. Throughout understanding the overall process and current status to focus on the most troublesome parts of the process.
- 3. Performance analysis which considers the KPI's of the process and how the process should be improved to meet the set KPI's.
- Organizational structure shall be analysed for the needed incentives, skills and attitudes to gain the best employees' commitment for the improvement work.

The case organization does not currently have a process management or continuous development model in place. As Andersen (2007, 20) explains once the

case organization has the key processes mapped and the process owners selected the case organization has a need to develop a continuous improvement model. This model will ensure that their new operational model does not deteriorate over time and slip back to its old state. The process owner would be responsible to oversee the performance according the roadmap and agreed KPIs and act time to time when developments are needed.

3.5 Theoretical framework

The literature selected for this thesis consists of different management books in the field of business process management and recent scientific articles searched mostly from ProQuest and Emerald. The most important literature is presented below in the theoretical framework.

Table 1. Theoretical framework

Author	Database	Year	Main themes
Margherita	Emerald	2014	Process boundary manage-
			ment
Caputo, Fiorentino &	Emerald	2019	Process management is
Garzella			moving towards boundary
			management
Kahrovic & Vignjevic-	State Uni-	2018	Business process maturity
Dorcevic	versity of		model analysis
	Novi Pazar,		
	Serbia		
Van Assen	Emerald	2018	Process thinking's impact on
			operational performance and
			customer experienced per-
			formance
Klun & Trkman	Emerald	2018	Process management and
			modelling impact on organi-
			zation
Krogstie	Springer	2013	Process modelling effect on
			performance

Most of the sources used are articles in the field of business process management and as recent as possible to get the latest trends and changes of the management field. The other literature is in the field of process mapping and development. The main themes in theoretical framework are business process management and business process development.

These theories are synthesised in a way how the business process maturity model explains the needs for the organization to grow more mature. These requirements for maturity are business process mapping, process management models, process thinking, organization management, information management and overall business process management. Overall these theories form a complete foundation for an organization to grow more mature and all the theories support each other.

4 METHODOLOGY

4.1 Research approach and data collecting method

A quantitative study tries to answer the research questions through "how many" and "how much" and through that make statistical generalizations, but in a qualitative study it's typical to try deeply understand the phenomena through questions "how" and "why". (Amaratunga, Baldry, Sarshar & Newton 2002,17.) In qualitative research the data gathering methods are usually interview, questionnaire, observation and gathering info from documents. The approach to research is more open in qualitative research and these different methods can be used in combination with quantitative research. (Tuomi & Sarajärvi 2018, 62-63.)

This thesis is a qualitative study which will investigate and answer how the case organization can develop its operations. Qualitive research is usually used to represent a real-life situation. The qualitative study was selected due to the nature of the development task in hand and because there are different types of data collection methods. Qualitive research looks deep into the problem and with relatively small sample size individual thoughts and ideas play an important role in the development of organization. (Oxford academic 2016.)

The theme interview has been selected as a method because the sample size is small of nine persons who have a very specific and valuable insight and lots of experience working in the case organization. As qualitative research does not aim for statistical generalizations but interpretation a certain phenomenon or actions, it is very important to select interviewees who have a lot of experience about the phenomena researched (Tuomi & Sarajärvi 2018, 73). Theme interview model leaves room for discussion and free expression (Saaranen-Kauppinen & Puusniekka n.d.), which suits the purpose of this study perfectly.

The interviewees selected for this study are the key stakeholders inside the processes from all three locations of the organization. They understand the previous developments of the organization and the requirements that have been forming the current operational model. This knowhow can be reflected to the development

of the new model and to avoid the pitfalls of previous developments. The interview questions are in appendices 2.

The interviews were held face to face for all interviewees in Finland, and the team abroad was interviewed via Microsoft Teams. A personal interview, rather than group interview, was selected because in group situation some of the participants would not participate so actively and some more extrovert persons could lead the discussion too much. This would lead to biased results from the interview. (Hirsjärvi & Hurme 2008, 63.)

The theme interview was semi-structured, so it had three main themes that guided the interview. The first interview theme was about discussing the current situation which aims to find out the impression the personnel have about the current status of the organization. Second theme discusses how the personnel see the process could be improved and the third theme discusses how the personnel see the organization is placed in the market and what are its strengths, opportunities and threats. The aim of these questions is not just to ask questions about the current model but rather to have meaningful answers and arouse thoughts and discussion about the topic (Hirsjärvi & Hurme 2008, 48).

4.2 Research data and analysis

The analysis method for this research was thematic analysis which based on the interview results. This makes this study an inductive study. (Tuomi & Sarajärvi 2018, 103). In thematic analysis, firstly the main leading ideas of the material are gathered in a theme mind map or similar pool of themes or ideas. Then the reaccruing themes or ideas are gathered in higher level themes and more general expressions are used. There are usually more than one theme because only one theme would require that all participants agree on all things in the interview and there are no general guidelines on how many themes should rise from the interview. The results of thematic analyses are also based on the activity of the researcher as how the researcher interprets the material. This has an effect on the outcome. (Tuomi & Sarajärvi 2018, 103-106.)

Next, the analysis process is discussed and also how the themes were formed will be explained. The overview of the material was gained by reading thoroughly all of the research material. Then the statements or opinions that were re-accruing between participants were written down putting a special effort in maintaining the originality of the thoughts. These thoughts were then put to certain groups and the relation between these different groups was analyzed. When 12 groups or main ideas were formed a thematic map was created out of these 12 groups and this formed the five main topics of the interview results.

The process maps for site A and B operations were also drawn during this thesis based on the expertise and personal experience of the thesis writer and upgrade managers. These process maps were analysed after the theme interviews had been held and improvements were implemented as described in the findings. The theme interview supported the forming of the process maps and the process maps are an excellent baseline for further development.

5 RESEARCH RESULTS

The interviews went according to the interview template. The questionnaire template was sent to the participants in advance through email, so that the participants would have a change to think about the themes beforehand. The interview and discussion progressed freely, and some questions were not asked if the topic had been gone through in previous answer or the interviewee had no input on the matter. The interviewees answered the questions from their own part of the process and if they had some reflections and experience from other parts of the processes as well.

As this thesis focuses to the operational development inside the case business unit, the local production unit representatives, which are not part of the case organization, were left out from the interview. As the different production units work differently and all of them have different products, the results would have varied too much. The personnel from all levels, from management to employee level, were interviewed to get reflection from all sides of the organization. This also gave a lot of valuable insight how different levels of the organization see the operations.

The main findings from the theme interview were development needs in following areas: operational model and tools, management model and information flow, customer value and quality, value selling and strengths of the organization and market and competitive forces. The findings were analyzed and compared to the theoretical framework to understand and explain the phenomena. The findings are in order of the theme interview for easy following of the results. The process maps that were drawn during the study are presented in the chapter 5.5.

5.1 Operational model and tools

It came clear in the interviews that this operational model has formed over time and it has never been mapped or analyzed in detail. As Kahrovic & Vignjevic-Dorcevic (2018, 72) define in their study this status overall implicates that the organization is on first stage of business process maturity level as the organization has noticed the need for development but no or little improvements have been taken to improve maturity level yet.

> "It was effective from the beginning with the resources we had with an ad hoc process. Now we have to improve our tools and processes together."

The interviewees also felt that the organization is a bit on reactive side and there is a lot of ad-hoc approach to customer requests and needs which is also common for this level of maturity model (Kahrovic & Vignjevic-Dorcevic 2018, 72).

A complaint considering the manual repetitive work rose up by all participants and it is related to the quotation tool and database the case organization is using. As this tool is old it is getting slow and unresponsive which makes making quotations frustrating. This platform is not supported anymore and will be replaced in following years, so no updates on the performance side are coming anymore. Four participants complained that there are a lot of unnecessary fields which should also be removed to make it clearer and faster to use. Overall the participants felt that this software issue is one of the biggest hinderers of performance for the organization and when discussing the development of the model all participants who work with Lotus Notes stated the next development would be a new database and quotation tool.

"The current model is allowing us to make offers properly, but not in an optimized way for best performance. We are losing time."

"Lotus Notes has a lot of troublesome characteristics and lot of unnecessary fields with no value what so ever. Lotus also has a lot of bugs and it's very slow. there is also repetitive fields."

"The problem is to link the operations to the development because lack of resources and time"

"New tools, more processes for more standard approach, but when you map processes so you can see the bottlenecks and analyses by step by step. We have to take so many things in to account. Its a complex world."

As these above quotes demonstrate, the business unit feels that the operations are running quite well but there is a high need for process development, mapping and management development. As the unit is are aware and open minded towards process development it can be considered as process-oriented unit. As Van Assen (2018, 451-454) explains process orientation of the staff is important to every organization and it has straight impact on operational performance and

customer focused performance as all employees understand their impact and value in the big picture.

5.2 The management model and information flow

The participants inside all of the different sites felt that there are sometimes gaps in the communication. The information flow issue can be related to the boundary management model Caputo, Fiorentino and Garzella (2019 391-397) explain in their study. In this study it was pointed out that the business process management model is moving towards boundary management as the organizations and business models are nowadays more and more complex. In this instance as the organization is working in three different locations and in two different countries the communication between the sites and over these boundaries is very important for good performance. Also, the fact that the small organization is operating with a huge number of customers in different projects can make the communication with ongoing things complicated. Ongoing projects were also a concern for some interviewees as their current status and schedule was not clear for some participants. Also, there was a feeling that the projects do not always get the background research they would need so there is a lot of fixing of issues even though the project should be ready.

"I think the current model for management is good. It's really well divided with the entities and we can share information with the teams easily. To Co-operation is working fine, sometimes there is a lack of information but most of the time it is good. "

"Sometimes you can feel the distance to French organization in lack of help when needed and lacking flow of information in for example pricing and other things. In the other hand it gives us freedom. I would like more consistent management style."

"It can always be better, for me it's working quite well, it's easy to communicate and call people, but we could improve communication."

"sometimes the background work is not done properly before the projects are released this is a problem of small organization as we don't have all the support we need."

The interviewees felt that more structured roles and boundaries would be needed to overall clarify the roles and the boundaries to work in. They stated that the boundaries and roles are agreed but they do not happen in reality. They also thought that with clear boundaries the employees would feel more confident do-

ing decisions. Also, according to the interviewees, it would leave the higher management out of certain lower level decision making which would reduce workload in that end.

As Margherita (2014, 649) explains clear roles inside the process are necessary for efficient BPM. Kahrovic and Vignjevic-Dorcevic (2018, 72) stated this is also an indication of low business process maturity in the organization as the roles and boundaries in the process are not clearly divided and a lot of personal involvement is needed. Overall the organization is relatively happy with the management style. The problematic issues that are at the moment visible can be removed by planning and implementing a project management process and by planning some communication framework. As Margherita (2014, 644, 658) explained in her study process-oriented organization can easily implement process management methods to project management for improved results and better management.

5.3 Customer value and quality

The quality aspect gave mixed results as there is a small difference in the operational model between sites. Site A and B don't have any quality control at the operations and site C has a checkup before the goods are moved into the packing department. None of the sites audit that the bill of materials is correct before the production is launched. On the other hand, the interviewees said that with current resources auditing the BOM's before the production would need a lot of new resources. Also, the product engineers did not see the bill of material related issues as prevalent as the problems of production quality and accuracy. According Klun and Trkman (2018, 786-788) and also according to Kothari and Lackner (2006, 245) the quality management aspect should be brought to attention of the case organization as quality is a very important part in the customer value experience. This lack of quality audit inside the process is indication of low maturity model of the organization.

"We should improve the quality management a bit. Problems are rooted to production. It does not matter how much we improve the bill of materials etc. If the production is not up to the task. We need a contact person to the production and some kind of quality audit before shipping, so the mistakes are noticed earlier. For example, packing department is not the place. It would be interesting to go and follow the production process. At the moment when the order is in Lean ERP, we stop following it there"

Regarding the customer value questions, the organization saw that most of the value is coming from the competence of the organization and the ability of the organization to solve complex customer issues and offer very specific solutions for customers. Also, the delivery time, response time and documentation aspects were brought forward as important matters. These can be thought of as key points in the process development for it to be able to increase the value experience further.

"Customer value comes from how fast and how right we provide the products to the customer. You can compare this when you buy parts for your car you want the right parts. Documentation should also be on point for easy installation"

As in this case, how fast and how right the production unit is providing the goods to the customer makes the customer value linked directly to the performance of the process. As the organization saw that there are various things that add the customer value, these issues should be focused first individually and then holistically when the whole process is mapped and analyzed. Interviewees saw also that the KPI:s of the process should be the response time, delivery accuracy and lead-times so the process key performance indicators would be in line with the customer value. This would mean that the organization is measuring the customer value experience as the outcome of the process. This relates straight to Kothari and Lackner's (2006, 245) customer value experience theory where different parts of the process deliver a part of the customer value and the combination of all of these steps create the over all customer value experience.

5.4 Value selling, strengths of the organization and competitive forces in the market

When discussing about the customer value and what is the strength of the organization, it came clear that the organization saw that its engineering knowledge, competence and experience in this business are the key strengths. As Andersen (2007, 20) explains, this is a strength of the organization which should be brought to the focus of the organization. The personnel saw that the issue is how to communicate the strength of the organization through the sales area personnel to the end customer.

"We could improve the customer value by understanding the customer needs better"

"we could increase customer value and sales by providing more material of the kits their use and installation this would help the customer to get the most value out of the kits."

"As we are a team, we can give customers a real upgrades solution's with different skills. We can bring to customer differences, it's a good opportunity to customer to get all kind of upgrades. Engineering knowledge!"

"Our strengths are product knowledge, flexibility and agility of what we are doing."

"Match the customer needs and solve them before customer has the problem. If you have it already when customer asks, we can have offer immediately. The key is to be proactive and be early in the party and prepare early."

As quotes above point out, more understanding a communicating with the customer and sales personnel could improve the customer value experience. The technical material and marketing material approach was also brought forward to add awareness to the end customers and help sales organization to promote the products and service.

As a solution more active communication with the sales area and more planned approach to customer communication was suggested. This could be solved with a market area communication process. This process would help to understand the needs of the customers better and for example what kind of supporting material customer wants. This is aligned to Kothari and Lackner's (2006, 245) customer value experience theory, where by meeting and exceeding customer needs in all parts of the customer value experience chain is needed to create most of the experienced value to customer. The customer value experience is combination of three main themes which are product, availability and experience minus the cost of ownership or purchase of the product. To really sell value to the customer the case organization should address all of the three main areas. The cost of the product may not necessarily be a key decisive factor for the customer while purchasing, if the added value experience is very high and for example the productivity increases. These factors pinpoint the need for understanding and communicating with the customer and while doing so the case organization could enhance their strengths to the market, sell and communicate the value the organization has to offer while listening the customers needs and align their operations

and offering accordingly to gain or keep the competitive advantage according the market position. (Kothari & Lackner 2006, 245.)

When discussing the market situation with the interviewees they did not see any threats coming from the market perspective. They thought the main competitors are the local small companies doing local installations and selling pirate parts. The other product portfolios with similar offering inside case company were seen also as a threat or as a challenger. When discussing the market position overall the interviewees were confident that they can outdo these competitors with the product knowledge, strong offering and also with the experience and references from previous successful installations. The main opportunities recognized were the new digital solutions and automation solutions as these offer a lot of customer value and the pull from the market is strong according the interviewees.

"The product is not easy, but we manage, how we can help the customer to go to product area and help them to sell, as we mature and get more visibility we will sell more."

"To move from technical expert to support sales. To put yourself to the shoes of the sales area."

"We are the OEM, we can certify solutions. for internal competition I think we are a team of expert people and we are recognized by this, we give good and strong answers. And I think we are able to provide customized solutions which is unique. we can adapt to customer needs- "

"The big opportunity is the digital solutions; the customer value is quite evident so easy to sell."

The case organization experienced that the opportunities in the market would be in the more efficient sales area communication and in areas providing more digital solutions to the market. According to SWOT analysis (Investopedia 2019), when the organization has detected its strengths, weaknesses, opportunities and threats the organization should aim to enhance its strengths to the market which in this case company is to sell value and promote the engineering and product knowledge to the market. To remove its weaknesses, according to the interview results, was the lack of sales area communication, supportive material and understanding of the customer suggested. Interviewees saw possible opportunities to exploit, such as more digital solutions in the market and better understanding of customer needs, being more proactive in offering new solutions and finally eliminating the threats for the organization, which according to the interviewees, were not significant or were non-existing.

5.5 Process maps

This chapter represents and explains the process mapping which was done during this research. The process maps were drawn together with the managers in site A and B to ensure accuracy and the needed detail in the maps. The managers were included in the process as they are the future process owners of these processes. Some improvements to the processes were already implemented during the process mapping.

At the beginning of this study there were no official process maps for the operations in site A or B. As Krogstie (2013, 3-10) defines, the processes should be drawn in a pragmatic and easy to read way. This was the leading thought while these process maps were drawn. The process maps were described in a level of detail where all the key decision points of the process are easily visible, and the roles of participants are clear, but no actions inside the process are left out. The databases and softwares used in the process are displayed in the bottom of the map in their own swimming line and if they are related to each other it's shown in the map with connecting lines.

The process map in figure 7 displays the overall process of request for quotation to customs clearance in sales area. This figure 7 is the first process map created and it was accepted by managers of site A and B. As the operations in location C are in different ERP this process map must be modified to the needs of C factory later.

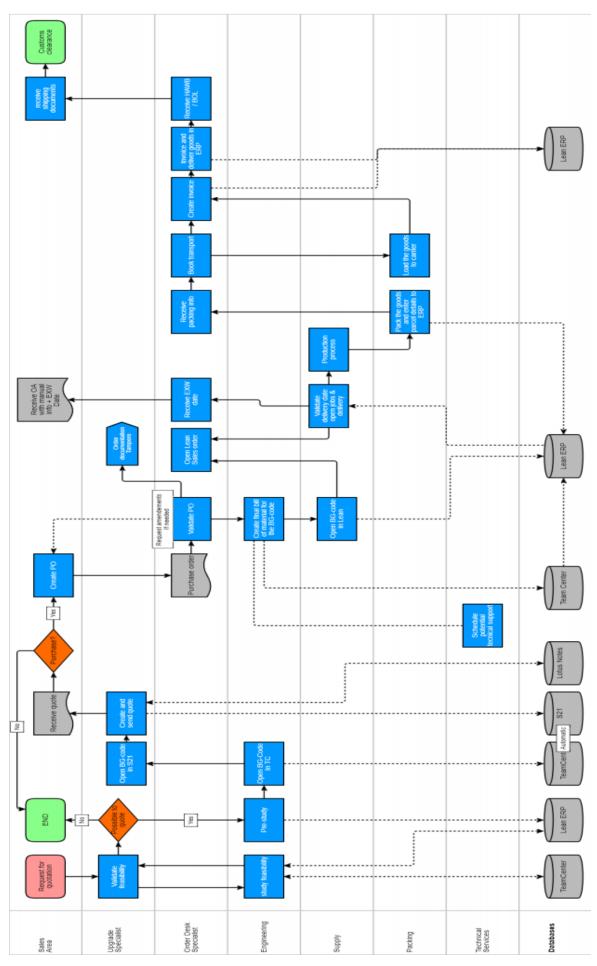


Figure 7. Quotation to delivery process. (Mäkinen, T. 2019.)

This process in figure 7 is the key process for case organization and the process owner is the local upgrade manager. The process begins with the customer request for quotation and upgrades specialist validates if the requested upgrade is doable and feasible together with the product engineer. If it is not doable the upgrades specialist informs the customer that the scope of the upgrade needs to be modified or some other way tries to steer the customer to right direction. If the request is quotable the upgrades specialists sends the quote to the sales area for review and sales area makes their own quote to the end customer. The information flow efficiency in this first part is very important for overall efficiency. If the information in the beginning is not correct or some of it is missing, a lot of time can be spent sending emails back and forth to get the right scope for the upgrade. The CRM sub-process could help on this issue to define and develop the customer communication process before the quotation.

If the customer decides to purchase, the upgrade order desk specialist processes the purchase order and informs the product engineer to release the kit to the ERP. Once the kit code is released in ERP the production confirms the EXW date to order desk specialist who confirms this to customer. Bottleneck in the process at this stage is the lacking in information flow regarding changes of the delivery dates and if they are not informed properly from production to the upgrades team. This sometimes causes bad customer experience as possible delays are informed too late to the customer. This is also related to Caputo, Fiorentino and Garzella's (2019 391-397) boundary management model where the communication across boundaries is shown to be very important for operational excellence.

The kit production is its own sub-process inside the production factory, but it has not been described separately by the production units. It would be essential to map this specific component process as soon as possible to implement possible quality phase to it. This quality audit phase would play an important role in ensuring the customer value experience when the customer receives the kit. After the production, the packing department packs the goods with the manuals and the goods are sent to the customer with the Incoterm and chosen mode of transport informed in the PO.

While this mapping was done a certain level of differences were noticed between sites A and B. The operational model on both sites were analysed and best practises were implemented. The changes to site B came from site A's operational model and the improvements were related to the ERP-usage. The main differences in the ways of working were how the engineering releases the BOM from the product management platform to ERP and how the production measures their delivery accuracy from production.

The difference in BOM to production release was in the level of detail when the bill of material is transferred to ERP. The model in site A was that the main level of bill of materials is divided to the order rows in a way that separate works for different items can be opened for the upgrade. These works get manufactured in their own time and are moved into the packing department. When operating this way, the order and packing list are also more detailed. Site B did not have knowledge about this opportunity in ERP before the process analysis and this was quickly implemented to B with support from A factory.

Another modification for B factory was the change in their way of measuring delivery reliability in ERP. In previous model they marked the goods as dispatched once the goods were packed. The downside of this model is that it makes the status of shipped kits look false and the warehouse value is inaccurate. A new status for goods inside packing department was created called "packed". This new status will show the delivery accuracy better from the production and you can search the items in this status straight from the ERP and check why they are still pending shipment. A site packing department started to use this ERP model as well.

The upcoming improvement from B production model to A production model will be a certain component cell for kits. This cell will improve the material handling ability in A factory when implemented and can be used as the basis for the upcoming quality process. B added a quality audit process to this component cell as a result of the process review. Further development needs and development ideas based on the theme interview and process mapping will be discussed in the next chapter.

6 DISCUSSION

This study examined and analyzed the operational model of the case organization. The methods were a theme interview and process mapping. The research environment was quite familiar to researcher as he had in his current position eight months of experience working in the case organization and in the processes related to the study. In the first two parts of this chapter the research questions as discussed and immediate development suggestions are given. In the third chapter the reliability of the thesis is analyzed and suggestions and needs for further development will be discussed.

6.1 Developing operational efficiency through BPM

As found out in the theme interviews, the case organization can be considered a base level organization in the business maturity model. In this level the organization acknowledges the operational inefficiencies it has and is willing to develop the model. From this level of maturity model the operational model development can start from the first lower levels of requirements. As the new operational models start to be stable, the organization can develop to the next levels and the benefits of BPM start to cumulatively increase. (Van Assen 2018, 451-454.)

According to Kahrovic and Vignjevic-Dorcevic (2018, 72) the organization can be developed from this base level to the first level by implementing first process management methods. The foundation for this process related development is mapping all current processes and sub processes. After the processes have been mapped the process owners should be put in place as the responsible persons for the process and its continuous development, which in this case is the upgrades manager. As the process owner and responsible persons inside the processes are determined, it will increase the ownership of the operations which will improve the overall efficiency and the motivation of the personnel. This will set the base level for further improvement, and as the theme interview pointed out, when the organization is process oriented the adaptation of new ways of working should not be a challenge.

The challenges related to quality process and communication between the production units and local case organizations, according to interviewees, could be solved with simple actions to the operational model. According to Van Assen (2018, 451–454) and Andersen (2007, 20) as these deviations in the process have been detected a roadmap for development should be agreed with production to solve the issue with a quality sub-process. After the new model of operation has been implemented the new agreed KPI:s and process owner for the production process should be put in place to ensure and maintain the gained performance. The implementation of the component cell to site A will help the implementation of the quality process as the components for kits will be stored in certain area before they are moved to packing department. Overall this quality development will have a straight impact on delivery accuracy, customer satisfaction and through this the customer value experience.

The next steps in the development of this business process management model according to Kahrovic and Vignjevic-Dorcevic (2018, 72) is to define more subprocesses. These sub processes are inside the RFQ to delivery key process and the goal is to further define the operations and implement new quotation software to the process. As shown in the interview results, the Lotus Notes platform was a big performance hinderer of the overall efficiency. As the implementation of the first process maps already provided some developments in the process, these simple methods of BPM will increase the operational efficiency of the case organization even further while setting a solid foundation for future development needs, which will be presented in the development suggestions chapter.

6.2 Increasing customer value through BPM

According to the interviews, the customer value aspect for the case organization is based on two main categories: engineering and product knowledge and operational performance in terms of delivery time, documentation and customer support. According to Andersen (2007, 20) and Klun and Trkman 2018 (786–789) as the first processes are mapped and the first KPI:s can be put in place, the process efficiency should be measured by these customer value experience metrics. These metrics can be for instance the response time to customer questions, the request to quotation time with different levels of complexity, lead-time compared

to promised lead time in quotation and delivery accuracy and correctness of the BOM. With these metrics the customer value experience can be increased with BPM. According to Kothari and Lackner (2006, 245), this customer value experience related development should be in focus for the case company to see higher margins and overall profitability in the long run. When the case organization has aligned their processes and operational model towards their long-time strategy it, according to Kahrovic and Vignjevic-Dorcevic (2018, 73), demonstrates also an increase in business maturity model.

6.3 Suggestions for further development

During the study due to time constraints there was only time to map one process map. Further process mapping should be done to map all value adding activities and sub processes. The needed process maps would be sales area feedback process, CRM sub-process and engineering sub-process. According to Kahrovic and Vignjevic-Dorcevic (2018, 73) defining these processes increase the cumulative benefits of BPM. Also, according to Van Assen (2018, 451–454) and Andersen (2007, 20) these processes cannot be developed and analysed before they are mapped.

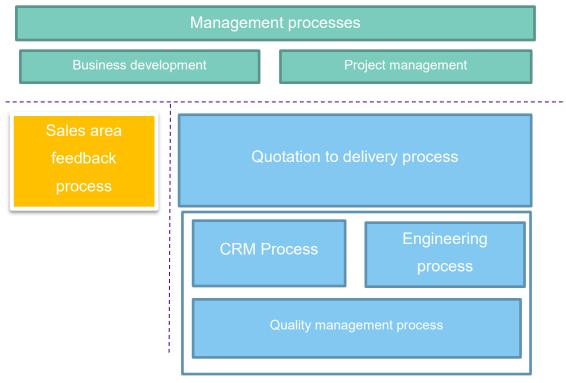


Figure 8. Suggested operational model. (Mäkinen, T. 2019.)

In above figure 8 is the suggested operational model and the key operations or processes and sub-processes of the case organization. The roles in this model are already existing to some extent, but this model defines them in more detail. In the figure the process is moving from left to right. The management processes are in the top, the key processes are below and the sub processes of the quotation to delivery process are in the box below the process. The idea of this visual top model is to represent all of the organization's operations. The goal of mapping the processes and adding the responsible persons to the processes is to add ownership and through that motivation of the employees. According to Van Assen (2018, 451–454) this process orientation is very important for overall performance of the process. The dotted line presents communication boundary which needs agreed communication model and frequency to remove the communication challenges felt by the interviewees. The organization should focus on this area as bad communication can have a negative impact on performance and motivation (Caputo, Fiorentino & Garzella 2019, 391-397). The quality management aspect should be brought also to the attention of the organization's operational model in all of these operations as the quality of the products and the service are important for the customer value experience (Klun & Trkman 2018, 786–788; Kothari & Lackner 2006, 245).

The need for sales area feedback process came obvious from the interview material. As mentioned in the findings, the participants in the process felt that they are not sure what are the customer needs and expectations. In the current model there is no direct operational model or process for continuous sales area communication. With closer communication to sales area and better understanding in the front line the case organization could answer the customer expectations and needs much better. This communication could also serve as a feedback forum where to gain some insight how the customers have experienced the quality and value of the kits. This feedback could be then systematically processed with the managers who could address the operations accordingly. These improvements according to Kahrovic and Vignjevic-Dorcevic (2018, 73) would help the case organization to modify its operations according to its strategy and this way the organization would meet the customer expectations better. This model would also

improve the communication between the boundary of sales area and the production unit, which according to Caputo, Fiorentino and Garzella (2019, 391–397) will add customer value.

In this model the upper management is the process owner of business development and project management activities. The business development is linked to the sales area feedback process as the sales area feedback is steering the business development according to the organization's strategy. Andersen (2007, 20–22) states that the development roadmap should be aligned towards the long-term goals of the organization for best results. The project management process means overseeing of all the ongoing projects, their schedules and informing the stakeholders about the progress and overall situation of the developments. In this project management the communication between the RFQ-to-delivery process boundary is crucial to get the insight from the operational side as well to the development. According to Van Assen 2018 (451–454) with this involvement and the employee commitment will increase as the overall picture and importance of individual tasks come clearer to the employees.

CRM process could be implemented as a sub-process inside the request for quotation to order key process. The process owner for this sub-process could be the upgrade specialist who is the key user per site to the CRM software. Adding the process owner to the sub-process according to Kahrovic and Vignjevic-Dorcevic (2018, 72) ads ownership and employee motivation. CRM process would set the standard way of communication through the CRM-platform which could make the information flow from the sales representatives towards the case organization easier. Also, a standard RFQ template could be designed and implemented to improve the information flow. This process could also steer some of the communication form emails more towards the CRM platform. The CRM development is also related to the boundary management model and would create customer value through more efficient communication in this sub process (Caputo, Fiorentino & Garzella 2019 391–397).

By defining the engineering sub-process, the quality aspect and the importance of the engineering work would also be brought to attention of the organization as according to Andersen (2007, 20–22) the organization should focus on the key

value adding activities in its operations and align the development towards the strategy of the organization. Also, according Kothari and Lackner (2006, 245) value experience theory in this part of the process has an impact on the overall customer value experience as the engineers have an impact on the product quality and also, they have the best knowledge in customer support with technical dilemmas. At the moment the engineers are working quite alone in sites A and B and during the interview they felt like they are alone and kept a bit in the dark about what is going on with the business and projects. By mapping and analyzing the engineering process the organization could see possible bottle necks and some ways to reduce workload from the engineering.

6.4 Reliability and validity of the research

Validity in the qualitative research means that the tools, methods and approach for the research are selected carefully. Also defining the research question and choosing the right method for that questions is essential for validity. When the tools, methods and approach are correct for the question the conclusions are also valid. (Lawrence 2015, 324–327.) This research the theme interview was chosen as the method due to the sample size and that the research question was related in operational and management development. In this kind of research, the insight and free expression of the personnel was needed rather than statistical generalization, so the tools are adequate for this research.

Reliability in qualitive research is challenging as the paradigms are diverse. This is the reason why the reliability of the qualitative research is based on consistency even though small variation in qualitative research is allowed due to the methodology used as the data can vary a bit due to the nature of the research. To minimize this marginal variation the researcher must ensure the accuracy when the data is extracted from the original source. The scope of the data analysis should be as comprehensive towards quantitative research aspects as possible. (Lawrence 2015, 324–327.)

The research and analysis process are explained in detail in the methodology which gives solid base for repeatability of the study as such but of course every case study is different so it may not be reasonable. The analysis of the interview

results was done very thoroughly, and the voice, perspectives and attitudes of the interviewees was kept as original as possible, also the quotations in the interview results bring the voice of the interviewees forward. However, as a researcher you always make choices and decisions when interpreting the results but it's most essential to be as objective and professional as possible. This was kept in mind for the whole time. In this study no-one else than the researcher had access to the data and the anonymity of the participants was a high priority. These factors make this study reliable.

6.5 Conclusions

This qualitative study examined how the case organization can develop its operational efficiency through business process management. The research was conducted as a theme interview. In the results it was found that the case organization was a business at base level of process maturity model. The organization was however process oriented and during the first process mapping done based on the theme interview results, it was found out that the organization can develop easily further on business process maturity model and operational efficiency was gained already during the thesis process. In the end of the thesis there were suggestions for further development including a new management model with new process owner model and with new sub-processes with responsible persons. Also, attention to boundaries of communication inside the organization were presented and special attention to them was suggested. Overall with the already implemented processes and improvements and with the future developments the organization can mature further and meet its targets and customer needs in the future.

REFERENCES

Andersen, B. 2007. Business process improvement toolbox. Second edition. Wisconsin USA: ASQ Quality Press.

Melenovsky, M. & Sinur J. 2006. Having a BPM Maturity Model is Important for Long Lasting BPM Success. Business Rules Journal 7(12).

Caputo, A., Fiorentino, R. & Garzella, S. 2019. From the boundaries of management to the management of boundaries. Business processes, capabilities and negotiations. Business Process Management Journal 25(39).

Hirsjärvi, S. & Hurme, H. 2008. Tutkimushaastattelu: Teemahaastattelun teoria ja käytäntö. Helsinki: Gaudeamus.

Lawrence, L. 2015. Validity, reliability, and generalizability in qualitative research. Journal of Family Medicine and Primary Care 4(3).

Kahrovic, E. & Vignjevic-Dorcevic, N. 2018. The five stages of business process maturity model. Paper presented at the International Conference of Strategic Management – IMCSM18. May 25 – 27, 2018, Bor, Serbia. XIV(1).

Klun, M & Trkman, P. 2018. Business process management – at the cross-roads. Business Process Management Journal 24(3).

Kothari, A. & Lackner, J. 2006. A value-based approach to management. Journal of Business & Industrial Marketing 21(4).

Krogstie J. 2013. Perspectives to process modeling. Berlin: Springer

Saaranen-Kauppinen & Puusniekka. n.d. Teemahaastattelu. Viewed on 22.08.2019 https://www.fsd.uta.fi/menetelmaopetus/kvali/L632.html

Laamanen, K. & Tinnilä, M. 2009. Prosessijohtamisen käsitteet = Terms and concepts in business process management. Teknova.

Laamanen, K. 2001. Johda liiketoimintaa prosessien verkkona. 8th edition. Suomen Laatukeskus.

Lecklin, O. 2006. Laatu yrityksen menestystekijänä. Fift edition. Talentum.

Margherita, A. 2014. Business process management system and activities. Two integrative definitions to build an operational body of knowledge. Business Process Management Journal 20(5).

Porter, E. 1985. Competitive Advantage: Creating and Sustaining Superior Performance. New York: The Free Press.

Sandhu, A., Gunasekaran, A. 2004. Business process development in process-based industry. Business Process Management Journal 10(6).

Tuomi, J. & Sarajärvi, A. 2018. Laadullinen tutkimus ja sisällönanalyysi. Helsinki: Tammi.

Van Assen, M. 2018. Process orientation and the impact on operational performance and customer-focused performance. Business Process Management Journal 24(2).

APPENDICES

Interview invitation:

12.09.2019

Cover letter

Dear Colleague,

I politely ask you to participate to this theme interview, which is a part of my master's degree of Business Administration studies in Tampere University of Applied Sciences. The goal of this interview is to produce information on how to improve our organizations efficiency and way of working by implementing business process management practices. If you'd like to participate to this interview, please contact me via email and we can discuss about the time that suits you the best. Your participation to this theme interview is in a key role and very important as developing the business processes and their management in our organization needs input from all key participants of the process.

The results of this interview will be used in a way that no single participant can be recognized from the results. You have a right to decline the interview or participation in this survey at any time without questions and forbid using the interview material if you choose so. All information will be highly confidential, and all data will be deleted right after it's been used in this survey. The only ones who has access to your information is the interviewer and thesis instructor, Doctor of Social Sciences Sari Matala.

If you have any questions regarding this interview or this survey, please feel free to contact me or Sari Matala.

With kind regards,

Tommi Mäkinen

APPENDICE 2 Interview themes and questions:

Theme 1: Describe the current process model

- How effective you see the current model?
- How well the current processes are mapped?
- How effective are the tools in use?
- How would you describe the management model at the moment?
- How the quality of the process is managed?
- · What creates the customer value?
- What are or should be the key performance indicators of the process?

Theme 2: How would you improve current model

- What are the main challenges of the current operational model?
- What are the main challenges with the management model?
- How would you develop the operational model?
- How would you improve the quality management?
- How would you improve process management?
- How would you increase the customer value?
- What would be the next step you would take to better overall management of processes?

Theme 3: The competitive forces

- What are the main competitors for the organization?
- What are strengths of the organization compared to competition?
- What are the opportunities for the organization in the market?
- What are the threats of the organization from the competition or from the market?
- Do you feel that there is a threat of substitute products entering the market?