

Modeling and optimizing of business processes

A case with LLC Wim Bosman, Russia

Konstantin Yakovlev

Bachelor's thesis

Degree program in Logistics Engineering

School of Technology

Jyväskylä 30.04.2015



JYVÄSKYLÄN AMMATTIKORKEAKOULU
JAMK UNIVERSITY OF APPLIED SCIENCES



| | | |
|--|--|--------------------------------------|
| Author(s) Konstantin Yakovlev | Type of publication Bachelor's thesis | Date 30.04.2015 |
| | Number of pages 61 | Language of publication: English |
| | | Permission for web publication: x |
| Title of publication Modeling and optimizing of business processes A case with LLC Wim Bosman, Russia | | |
| Degree program Degree Program in Logistics Engineering | | |
| Tutor(s) Henri Kervola, Petri Vauhkonen | | |
| Assigned by Tommi Franssila | | |
| Abstract <p>This report was written as a proposal for a Bachelor thesis project. Its objective was to model and optimize the business processes in the Wim Bosman Company in order to standardize the existing template of processes with the solutions for optimization so as to reduce double work and waste of time. The relevance of this study is determined by the fact that modern enterprises are forced to constantly work on improving their operations because of the continually growing competitive landscape. This requires the development of new technologies and methods of conducting business as well as improving the quality of the final results. This also requires the introduction of new, more efficient methods of management and organization in a company.</p> <p>The study concentrated on finding the most efficient processes by using the Business Process Management approach. In this thesis the most important factors, stages and techniques of Business Process Management are discussed. All the employees were separately interviewed in order to collect comprehensive information about the whole process model and to collect suggestions for optimization. Data for the study was also collected by using the relevant literature and the company's database.</p> <p>As a result of this thesis work the following steps were followed: an existing model was defined, the areas of optimization were discovered and the solutions for optimization were presented and implemented into a new business process model.</p> | | |
| Keywords/tags Business Process Management, Business Process Modeling, Business Process Reengineering, Business Process Improvement, BPI, Continuous Improvement | | |
| Miscellaneous | | |

Abbreviations

BPI- Business Process Improvements

BPR- Business Process Reengineering

BP- Business Process

CI- Continuous Improvements

PDCA- Plan- Do- Check- Act

WB Rus- Wim Bosman Russia Company

BPM- Business Process Management

MF- Mainfreight

DFD- Data Flow Diagram

IDEF- Integrated Definition for Function Modeling

LM- Lean Management

DMAIC- Define, Measure, Analyze, Improve, Control

DMEMO- Design, Model, Execute, Monitor, Optimize

Contents

| | | |
|-------|--|----|
| 1 | Introduction | 4 |
| 1.1 | Background to the thesis project | 5 |
| 1.2 | Interaction with Wim Bosman Company | 6 |
| 1.3 | Research Method and Data Collection | 7 |
| 1.4 | Thesis structure | 8 |
| 2 | Business Process Management..... | 10 |
| 2.1 | What is Business Process Management..... | 10 |
| 2.2 | Main objectives of BPM..... | 11 |
| 2.3 | Why to use process approach?..... | 11 |
| 2.3.1 | Purpose of Process Approach..... | 12 |
| 2.3.2 | Principles of Process Approach..... | 12 |
| 2.4 | What is a Business process? | 13 |
| 2.5 | Types of Business Processes | 14 |
| 2.6 | Lifecycle of Business Process Management | 15 |
| 3 | Business Process Modeling | 18 |
| 3.1 | What is Business model? | 19 |
| 3.2 | The main targets of Business Process Modeling | 20 |
| 3.3 | Stages of Business Process Modeling | 20 |
| 3.4 | Methods of Business Process Modeling | 21 |
| 4 | Business Process Improvement | 23 |
| 4.1 | The need for Improvements..... | 24 |
| 4.2 | Business Process Improvement tool: Lean Management | 25 |
| 4.2.1 | Main principles of Lean Management | 25 |
| 4.2.2 | Tools of Lean Management..... | 27 |
| 4.2.3 | Improvement Process/ Cycle..... | 28 |
| 4.3 | Business Process Improvement tool: Six Sigma | 29 |
| 4.3.1 | Key elements of Six Sigma philosophy | 30 |

| | | |
|-------|--|----|
| 4.3.2 | Key elements of Six Sigma methodology | 30 |
| 4.3.3 | Implementation of Six Sigma..... | 32 |
| 5 | Business process Reengineering | 33 |
| 5.1 | Main characteristics of Business Process Reengineering..... | 34 |
| 5.2 | The core differences of Business Process Improvement and Business Process Reengineering..... | 36 |
| 5.2.1 | The differences in the changes | 36 |
| 5.2.2 | The differences in the mechanisms of implementation..... | 37 |
| 5.2.3 | Differences in the description of business processes "as is" | 37 |
| 5.2.4 | Differences in the participation of the first head..... | 37 |
| 5.2.5 | Differences in initiatives | 38 |
| 5.2.6 | Differences in control..... | 38 |
| 6 | CASE: Modeling and optimizing of business process in Wim Bosman..... | 39 |
| 6.1 | Project description | 39 |
| 6.2 | Vision..... | 40 |
| 6.3 | Design..... | 41 |
| 6.3.1 | Collecting Data..... | 41 |
| 6.3.2 | Creating As-is model..... | 42 |
| 6.4 | Model..... | 46 |
| 6.5 | Execute | 48 |
| 6.5.1 | Eliminating of informational e-mails. | 49 |
| 6.5.2 | Standardization of documents. | 50 |
| 6.5.3 | Employee Engagement..... | 51 |
| 6.5.4 | Creating “to-be” map | 51 |
| 6.6 | Monitor | 53 |
| 6.7 | Optimize | 54 |
| 7 | Conclusion..... | 57 |
| 8 | References | 58 |
| 9 | Appendices | 60 |
| 9.1 | Appendix 1 “as-is” map..... | 60 |
| 9.2 | Appendix 2 “to-be” map..... | 61 |

List of figures

| | |
|--|----|
| Figure 1. Wim Bosman Logo (Wim Bosman Group, 2007)..... | 7 |
| Figure 2. Business Process (SCM Solutions: Meadewillis EN , 2006)..... | 14 |
| Figure 3. BPM Lifecycle (Guide/ How to: BPM Resource Center, 2012) | 16 |
| Figure 4. Business Process Management (Ganesan, 2010)..... | 17 |
| Figure 5. Business Process Modeling (Home / Business Process Modeling: ICT Consultans Blog, 2009) | 18 |
| Figure 6. Flowchart of business processes (Service/BPM Glossary: Aris Community , 2009)..... | 19 |
| Figure 7. Principles of Lean Management (Illustration of Project Dynamics: Clipart Me Web site, 2005) | 26 |
| Figure 8. PDCA (Monitoring, reviewing and enhancing an AML/CTF program, Continuous improvement: Commonwealth of Australia Corporation, 2009)..... | 29 |
| Figure 9. Six Sigma (Illustration of cycle indicating process improvement: Clipart Web site, 2006) | 32 |
| Figure 10. Business Process Reengineering (Pictures For (Business Process Reengineering): PixGood Web site, 2005) | 35 |
| Figure 11. Vision map | 40 |
| Figure 12. Example of working in Visio | 43 |
| Figure 13. Core processes of Sales department..... | 44 |
| Figure 14. Core processes of Operational Department | 45 |
| Figure 15. Issues to be improved | 48 |
| Figure 16. Example of collecting information “as-is” 1 | 49 |
| Figure 17. Example of collecting information "as-is" 2..... | 50 |
| Figure 18. Improvement of Information Input | 51 |
| Figure 19. Improvement of Final Quote..... | 52 |
| Figure 20. Improvement of Quotes Location | 53 |
| Figure 21. Vision map for future improvements | 56 |

List of tables

| | |
|--|----|
| Table 1. Differences between BPR and BPI (Mehta, 2011) | 36 |
| Table 2. Questionnaire for employers | 41 |

1 Introduction

Due to fast growing global market of the 21st century, modern companies have to constantly work on improving their operations in order to keep a high level of competitiveness. This requires the development of new technologies and methods of doing business, and improving the quality of the final results. Moreover this also requires the introduction of new, more efficient methods of management and organization of enterprises. Any enterprise is a complex system, due to the different activities and a large number of relationships with partners (Kovalev & Kovalev Valerii, 2015). In addition the dynamics of business processes always increases because of continuous improvements in the technological capabilities and strong competition caused by continually changing needs of the market, new orientations to producing goods and catering for individual customer needs.

Analysis of business processes today is very widespread and carried out in every organization that wants to improve its effectiveness. When an optimization or re-engineering of business processes is competently made, it can help the organizations to solve all sorts of problems relevant to them.

Organizations can gain a great deal of benefits by having documented business process models available. This gives greater transparency to its activities, which in turn is an additional motivating factor in the investment attractiveness of the organization. For developing companies seeking to ensure a competitive position in the market, it is especially important to clearly understand the role of business process modeling, its relevance, and place in the organization.

Today, most organizations are actively trying to create their own models of business processes or use existing reference models, and it has its own reasons, which can be easily explained by various factors. The company should be prepared to quickly adjust to the changes in the markets in terms of the dynamics of the modern world, to lead innovation, to introduce new technologies and approaches in their work, and to compete with other companies (Gordeev & Borisov, 2009). In a competitive environment, which is

constantly increasing, it is necessary to implement information systems, which serves as an important factor in competitive companies today. The high level of business processes automation in a company leads to more effective support to the employees and managers, and increases the productivity of the business processes.

The main targets of this thesis were to describe an existing process and optimize them using Business Process Management methodology. In the theory framework all the necessary steps, modeling tools and improvement techniques of this methodology are discussed and analyzed.

For the further optimization of processes there are two tools for improvement such as Business Process Improvement and Business Process Reengineering. The most famous techniques are explained, listed and compared further in the theory part.

1.1 Background to the thesis project

Due to a significant variety of processes and connections between people and departments in the WB Company there is constant need for improvements in order to achieve the best result. A closer look into the business processes model shows up a common practice by individual employees of the WB Company. They have found their own way of performing daily tasks, with individual approaches and methodologies. Such a lack of standards creates a certain losses in the processes that have to be removed in order to eliminate double work, waste, and cut of the costs. In addition to all the individual methods of working, there are many everyday operations which are done in a different way every time. They are not standardized and regulated so as to be understood by new employees.

The main target of the thesis implementation was to build an existing model of the processes, to define the possible spaces for optimization and improvements, to create possible ways of solving them, to apply one of the methodologies in

order to make this optimization real. The main goal of the whole project was to define a certain steps or rules which would be followed during every process.

This thesis work discusses how to build a certain model of business processes in a company. Moreover, it suggests improvements, methods for optimizing and tools for continually improving and monitoring them.

1.2 Interaction with Wim Bosman Company

Wim Bosman Company offers impressive possibilities in logistic services. It has 165.000 4 sq. meters of warehousing capacity. WB operates in countries, such as: the Netherlands, Belgium, France, Romania, and Russia. It has 900 transport units of which 280 are Ge-motorized and 1400 employees (WimBosmanCorporateMovie, 2013). In 2011 the WB Company achieved a place in the Top 10 logistics service providers all over the world. During the 40 years of the company's history WB has reached a turnover of 150 million. It has 70 main distribution centers and 156 warehouses. The WB Company can transport the cargo to any destination in the world, and it does not matter if it goes by ship, by road, by train, or by air (Mainfreight, 2014).

Since 2011 WB has been a member of the Mainfreight group, a global Supply Chain Logistics company with 233 branches across 20 countries and 5771 employees. MF owns a truck fleet and warehouses, and it also has direct contracts with ocean and airlines.

The development and implementation of this thesis project was organized with the General Manager of WB Rus, Saint-Petersburg, Russia. WB's Russian branch provides forwarding services and global transportation for Russia and Finland. It has been operating since 2008 (WimBosmanGroup, 2014).



Figure 1. Wim Bosman Logo (Wim Bosman Group, 2007)

1.3 Research Method and Data Collection

In this thesis the author investigated and suggested some improvements in Wim Bosman's operating processes. In order to understand the company's structure from inside it was decided that a small study had to be conducted.

Research is about collecting data and collecting information. It is about learning and finding something new. It also means opening new horizons and advancing our knowledge. Research is about seeking information with a clear goal in mind. With the help of different methods of research it is possible to find answers to any questions, predict future steps, build a strategy and understand the observed phenomenon.

In a research process information is searched again and again (re-search). We are looking for information that others have found before trying to see something that they have not seen.

A qualitative research method was chosen for collecting the needed data. Qualitative research explores the meanings of people's experiences, cultures, particular issues or cases. Qualitative research answers to questions "What" and "How". This method is exploratory, not predictive or hypothesizing. It shows the picture of a company to its employees.

Data collected from the qualitative research is usually written in the form of people's "words", such as: interviews, documents (newspapers, journals, etc.),

observation and audio-visual materials (video recordings). In the case of Wim Bosman the author used interviews, and all of the information was recorded on a Dictaphone. The author worked in different departments, observing people, and trying to understand the operations in the company. By combining these different forms it was easier to build strategies and find ways of development. The data was collected “from the field”, from the natural settings where the participants were, where the researcher spent a great deal of time interviewing and observing the participants.

The purpose of this research was to find the inside of the company and expose real problems and weaknesses of the operations.

1.4 Thesis structure

This thesis consists of nine major chapters: Introduction, Business Process Management, First step: Business Process Modeling, Second step (first method): Business Process Improvement, Second step (second method): Business Process Reengineering, Case: Modeling and optimizing of business processes in Wim Bosman company, Conclusion, Appendixes and References.

Chapter one includes a general look into the whole thesis. It starts with an introduction to the whole thesis, its key problems and the case organization, and continues with an overview of the topic and finishes with a small introduction to the Wim Bosman Company.

Chapter two is all about the introduction to the main concept of Business Process Management, its main ideas and tools. It gives an idea what kind of techniques and methods were used for analyzing the current company's situation.

Chapter three tells about the first and the most important step in BPM called Business Process Modeling. This chapter also explains the importance of it, and the main targets and stages of the modeling process.

Chapter four moves to one of the next possible stages of Business Process Management called Business Process Improvement. This chapter leads us through one of most famous tools of BPI, called Six Sigma and Lean Management in order to give an example of the significant variety of different improvement tools.

Chapter five introduces the idea of using Business Process Reengineering as an alternative to Business Process Improvement. It opens the main targets and principles of BPR and also compares it with the BPI methodology.

Chapter six presents an overview of the project and also the implementation steps. This part introduces the author's work which was done during the research process and also the suggestions for the future improvements and monitoring of the recommended steps and decisions.

Chapter seven is the conclusion to the whole thesis. It underlines all the problems that were discovered during this research process and presents conclusion about the solutions that were taken.

Chapter eight and nine present the references of the thesis that were used as the source material. In addition, also the appendices are shown.

2 Business Process Management

Before performing an optimization, it is necessary to clearly identify the business processes. Optimizing a chaos is impossible. Already an implementation of some formal rules to the final results of the procedures is, in itself, an improvement, since it is a small step from chaos to order. There are two principal areas: reducing operations and improving business performance. There are plenty of techniques for modeling and optimizing business processes. A few of those, which are low-budget and immediately applicable, are shown here (Kovalev & Kovalev Valerii, 2015).

During the last 20 years, the BPM methodology has received plenty of attention and it has been growing in many different ways. Many scientists and writers have proposed their own ways of improving the BP, however BPM is definitely the most popular and useful tool for it. This thesis mainly discusses the most widely-used and convenient methodologies of BPM for managing the BP in the Wim Bosman Company. It explains how Wim Bosman can experience a transformation by building its business model on one of the BPMS solutions and optimizing it by using one of the BPM methodologies.

2.1 What is Business Process Management

Business process management (Business Process Management) is a systematic approach to management, aimed at improving the organization and its processes. This approach enables organizations to define their processes, to organize their implementation, as well as improve the quality as a result of processes and procedures for the execution (Miers, 2006, p. 2).

2.2 Main objectives of BPM

The main objective of business process management is to bring the process into line with the objectives of the organization. Each process must be configured so that the results of the process lead to the achievement of the business goals.

Business process management uses the following approaches:

- Comprehensive, clear and documented process standardization, which includes the creation of a set of standardized processes and the ability to configure them to changing conditions;
- Continuous improvement of processes, including the daily monitoring, measurement, analysis and change of the processes;
- The application of information technology and software, including the modeling of business processes, the use of CASE tools, automation of business processes and their optimization on the basis of information technologies (Miers, 2006, p. 4).

2.3 Why to use process approach?

A process is one of the concepts of management, which was finally formed in the 1980s. In accordance with this concept, all activities of the organization are viewed as a set of processes. In order to manage, one must manage the processes. The process became one of the key elements of future business management.

The main concept in process approach is the concept of a process.

There are different definitions, however the most commonly used is the definition of the standard ISO 9001: “Process is a set of interrelated or interacting activities that transform inputs into outputs”. An important part of the process, which is not reflected in this definition, is the systematic nature of the actions. An action process should be repeated, and not randomly (James, Esseling, & van Nimwegen, 2002, p. 25).

2.3.1 Purpose of Process Approach

The process approach was developed and used in order to create horizontal communication within the organization. Units and staff involved in the same process can independently coordinate their work within the process and solve problems without the participation of senior management. Process approach in management allows addressing the emerging issues and influencing the outcome more quickly (Vendrov, 2004). In contrast to the functional approach, process management makes it possible to concentrate not on the work of each of the units, but on the work of the organization as a whole. Process approach changes the concept of the structure of the organization. The main element is the process in accordance with one of the principles of the process approach.

2.3.2 Principles of Process Approach

The process approach is based on several principles. Introduction of these principles can significantly improve performance, but at the same time, it requires a high corporate culture. The transition from functional management to process management requires constant cooperation from the employees, despite the fact that they may belong to different units. An ability to provide joint work will depend on the "performance" principles of the process approach (PiterSoft, 2015). When implementing control processes, it is important to adhere to the following principles:

The first is the principle of the relationship processes. An organization is a network of processes. A process is any activity where there is the execution of work. All processes of the organization are interconnected.

The second is the principle of process demand. Each process should have a purpose, and its results should be the final objective. The results of the process must have their own internal or external customers.

The third principle is the principle of process documentation. An activity in the process must be documented. This makes it possible to standardize the process and form the basis for changes and further improvement of the process.

The fourth principle is process control. Each process has a beginning and an end, which define the limits of the process. For each process within the defined boundaries there must be defined parameters that characterize the process and its results.

The fifth principle is the responsibility for the process. In carrying out the process various experts and staff can be employed, but the same person should be responsible for the process and its results (James, Esseling, & van Nimwegen, 2002, p. 37).

2.4 What is a Business process?

A business process showed on Figure 2 is a regularly repeating sequence of interrelated activities (operations, procedures, actions) which are done by using external environment resources in order to create value for the customer and give him the result. Business processes should have a single manager who manages the process and who is responsible for the result. In any company there are at least several dozens of business processes (PiterSoft, 2015).

Business processes, according to one of the most common classifications, are divided into main processes and sub-processes (support). The core business processes provide the main income stream of the company and serve as the basis of the whole business, and sub-processes serve the core. As an example, the main business process can be in sales and production, and sub-processes can be in recruiting personnel and accounting.

Every business process has an owner, who has to be qualified, as well as a supplier who provides the resources for the business process. Finally, the

consumer receives the output products of the business process. In this case, the supplier and the consumer may be both external and internal to the organization (Melcher, 2011, p. 45).

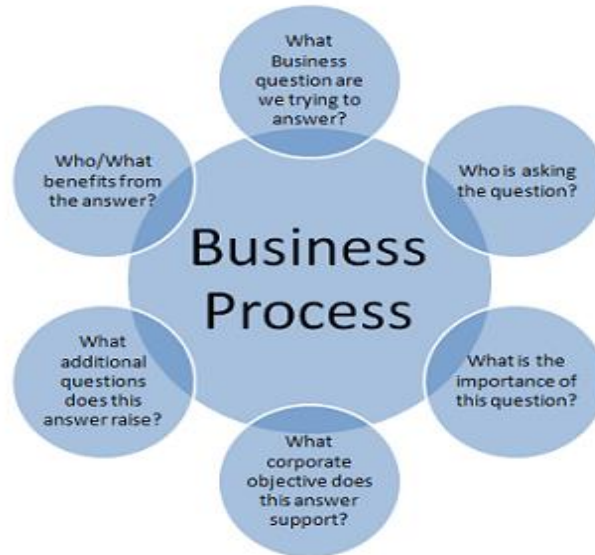


Figure 2. Business Process (SCM Solutions: Meadewillis EN , 2006)

2.5 Types of Business Processes

Businesses Processes are separated by type depending on their classification. Business Process Management covers all of them.

We can distinguish three groups of business processes:

- Management processes. These processes are intended for planning, monitoring and performance analysis. Management processes can guarantee the objectives of production and provide for the process. Management processes do not add value to the end user, but they are necessary for the effective and efficient operation of the organization. These processes often include planning, goal setting, monitoring and measurement, budgeting and so on (Shirtladze, 2014, p. 5).

- Production (core) processes. As a result of these business processes, the organization achieves its goals. Production processes provide conversion products or services and add value to the end user. Production processes are: designing, manufacturing, services, construction and so on.
- Supporting processes. These processes are necessary for the proper performance of the production processes. They do not bring added value to the end user, but without them it is impossible to achieve the objectives of the production processes. These processes include procurement processes, human resource management, infrastructure management and so on (Millen & Botond).

2.6 Lifecycle of Business Process Management

The cycle of BPM follows the principles of continuous improvement. Based on these principles, management consists of repetitive steps. Each stage involves several phases. Each course of each phase includes a set of actions. In general, the stages of business process management are similar to the cycle of the DMAIC methodology Six Sigma (KPMS, 2007).

Business Process Management consists of the following phases shown in Figure 3. The first phase is the process definition. In this phase, the simulation process is in the initial state and the desired state (developed model "as is" and "as it should be"); this stage helps to determine the process for improvement, to form the Process Management team, define the roles and responsibilities of the team members, and identify process goals, objectives and expected outcomes (Seliverstova, 2014).

The second phase is the modeling of processes. In this phase, various options are determined by process simulation. As a result, the best practices for improving the business process are defined.

The third phase is the implementation of changes. In this phase the methods are used to improve the chosen processes. The changes in the process are introduced.

The fourth phase is the monitoring of processes. This phase is carried out as periodic monitoring of the process according to a certain parameters.

The fifth phase is the optimization process. In this phase comparison is performed between the results actually obtained and the desired change in the process model ("how to be"), and the next cycle of improvement begins (Millen & Botond).

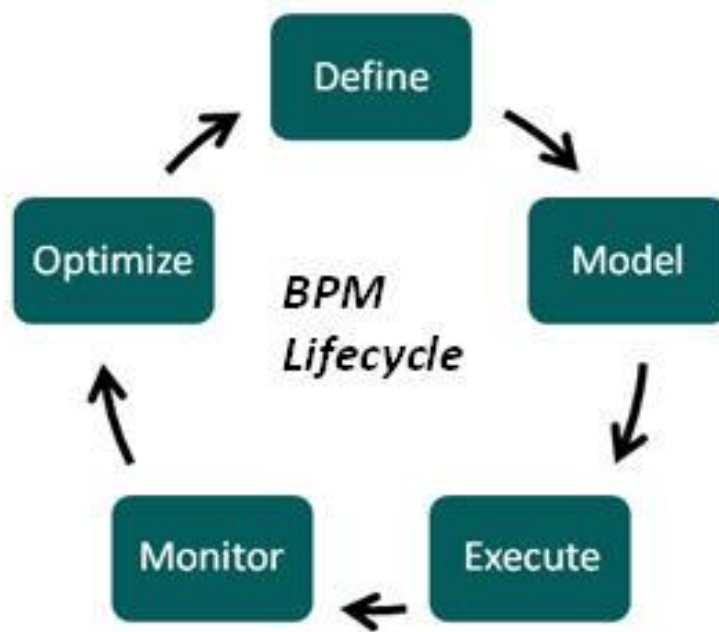


Figure 3. BPM Lifecycle (Guide/ How to: BPM Resource Center, 2012)

In these phases business process management must first be applied to multiple processes, and then to the preliminary phase. During the preliminary phase the necessary processes are selected, and priorities for their change and improvement are set. In its core, BPM is about creating and improving business processes. There are a multitude of disciplines and activities that can be considered BPM. They are called Business Process Improvement. These

disciplines include: Total Quality Management (TQM), Six Sigma, Lean Principles, etc. All contain elements of process improvement (Millen & Botond) (Ruth, 2003).

It does not matter what kind of method one chooses if one does not have a defined roadmap to follow. In order to see and find the possible areas of improvement, it is necessary to build a roadmap with stops and signs along the way in order to follow the right way. An initial point for the future improvement is modeling. Mainly we can divide the BPM implementation into two big parts: Business Process Modeling and Process Improvement. Figure 4 shows those parts.

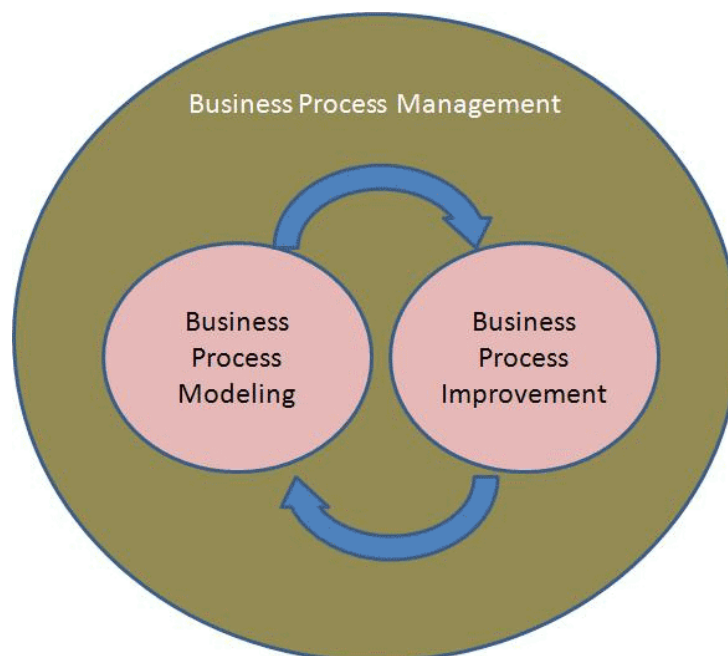


Figure 4. Business Process Management (Ganesan, 2010)

3 Business Process Modeling

The modeling of BP in the company is an initial start (first step) for the Business Process Management methodology. It allows making a comprehensive analysis, to take a look on all the processes from all angles, to identify weaknesses that other employees could not see, including management.

The idea of business process modeling is a signal to the fact that the modern manager and all employees need a clear vision of all activities and, most importantly, its final result (Seliverstova, 2014).

Having a business model with its all business processes which are tailored for a specific purpose, we can open up the possibility to improve it. Analysis of a company by modeling of BP is a convenient way to answer the question of what is necessary and sufficient to achieve a specific goal (Ruth, 2003).

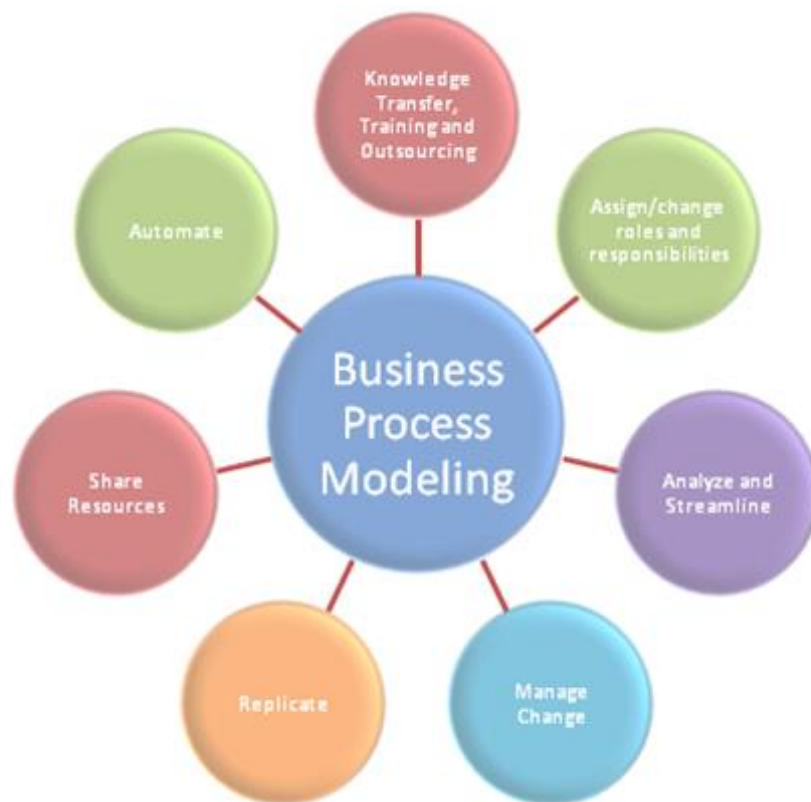


Figure 5. Business Process Modeling (Home / Business Process Modeling: ICT Consultants Blog, 2009)

The basis of this method is the description of the process through the various elements (action data, events, and other materials.). Typically, the modeling of business processes describes the logical relationship of all elements of the process from its inception to completion within the organization. In more complex situations, the simulation can include external processes to the organization or system (Kovalev & Kovalev Valerii, 2015).

3.1 What is Business model?

Business model is a compact simplified view of the business, designed for the overview and analysis of interconnected business processes in the entire system. Creating a business model can be used as one of the steps of strategic planning.

Business model expresses the essence of the business system, so it can only be developed by the management team of the organization. The business model should answer to the key questions about the business system, such as: "What?", "How?", "For whom? », «With whom? » etc. (Ruth, 2003).

For a graphic description of the activities flowcharts of business processes are used, the example is showed on Figure 6.

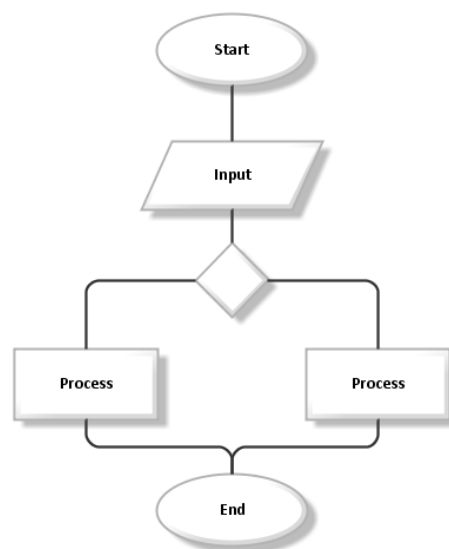


Figure 6. Flowchart of business processes (Service/BPM Glossary: Aris Community , 2009)

3.2 The main targets of Business Process Modeling

The ultimate goal of modeling business processes is to achieve improvement. To conduct this, the analysis focuses on enhancing the value of the results of the process and reducing the cost and time of execution of actions.

Proper modeling of business processes has several objectives:

- The first goal is the description of the processes. Due to modeling it is possible to trace what happens in the process from start to finish. Modeling allows to «external» view of the processes and identifies improvements that will enhance their effectiveness.
- Secondly, a valuation process. Business Process Modeling sets rules for the implementation of processes. It means in which manner they should be performed. With following the rules, guidelines or requirements due to setting out the models, it is possible to achieve the desired process performance.
- Third, the establishment of relationships in the process. Modeling of business processes establishes a clear link between the processes and requirements that they must fulfill (Vendrov, 2004, pp. 20-24).

3.3 Stages of Business Process Modeling

Business Process Modeling typically comprises performing several successive stages. Because the ultimate goal is to improve the modeling process, it covers "design" of the work, and work on the implementation of process models.

The composition of the stages which includes modeling of business processes as follows:

- Identification of the processes and construction of the original model "as is". In order to improve the process, it is necessary to understand

how it works at the moment. At this stage, the boundaries of the process should be defined, key elements are identified and data are collected. The result is an original model of the "as is". This model does not always adequately reflect the work process, so the model this stage can be called the "first pick" or the original model "as is".

- Revision, analysis and refinement of the original model. At this stage all the inconsistencies and duplications of efforts become revealed in the processes, process limits and relationships are defined. The result is a final version of the model "as is".
- Development of a model "as it should be." After analyzing the current situation, it is necessary to determine the desired state of the process. This desired state is represented in the model "as it should be." This model shows how the process should look like in the future, including any necessary improvements.
- Testing and application of the model "as it should be." This stage is associated with the implementation of the model into the practice inside the organization. Business process model is being tested.
- Improvements of the model "as it should be." Business process modeling is not limited by the creation of the model "as it should be." Each of the processes during the work continues to change and improve, so the process model should be regularly reviewed and improved. This stage is associated with modeling the continuous improvement of processes and improvement of business process models (Ruth, 2003).

3.4 Methods of Business Process Modeling

Today, there are quite many methods for modeling business processes. These methods apply to different kinds of simulation and provide focus on different aspects. They contain both graphic and text tools, through which it is possible to visualize the basic components of the process and to give precise definitions of parameters and relations of elements.

- Flow Chart Diagram (workflow diagram) - is a graphical representation of the process method in which the operations, data and other process equipment are displayed by special characters. The method is used to display the logical sequence of the process. The main advantage of this method is its flexibility. The process may be represented in many ways.
- Data Flow Diagram (data flow diagrams). Figure DFD allows showing the data stream, not the files. Diagram of the data stream describes operations by the relationship information and data. This method is based on the structural analysis of the processes; it allows us to decompose the process into logical levels. Each process can be broken down into sub-processes higher level of detail. DFD application allows reflecting only the flow of information, but not the flow of materials. Data flow diagram showing how the information comes in and out from the process steps which change the information, where the information is stored in the process and so forth.
- Role Activity Diagram (Chart roles). It is used to simulate the process in terms of individual roles, groups, roles and interactions of roles in the process. The role is an abstract element of the process performing any organizational function. The diagram shows the roles of the degree of "responsibility" for the process and its operation, as well as the interaction of roles.
- IDEF (Integrated Definition for Function Modeling) - is a set of methods for describing different aspects of business processes (IDEF0, IDEF1, IDEF1X, IDEF2, IDEF3, IDEF4, IDEF5). These methods are based on the methodology of SADT (Structured Analysis and Design Technique). For modeling business processes most commonly used methods IDEF0 and IDEF3 (Vendrov, 2004, p. 34).

4 Business Process Improvement

Methodology for business process improvement (BPI) helps to implement the improvement to business through a certain approaches with a use of different tools. Business Process Improvement is “second step” of Business Process Management. Moreover there are different methods of continuing BPM: Business Process Improvement and Business Process Reengineering. Business process Reengineering is discussed in next chapter, chapter 5.

BPI assumes a gradual improvement of existing processes. Improvement of business processes can be expressed by any effort to change the process. BPI is usually narrowly focused on a particular aspect of the process and involves a continuous repeating of actions for their improvement throughout the life cycle of these processes (Seliverstova, 2014).

The methodology of improving business processes include the tools such as: Six Sigma, Lean Management, Total Quality Management, and many others. It can be considered the standardization, regulation of business processes as improving business processes too. In many cases the result of description and optimization of business processes is precisely the introduction of regulations on which the new rules for the implementation of operations in the organization are introduced. In order to keep the regulations of the process really work, managers at all levels need to constantly monitor the compliance with the requirements of these regulations and to organize teamwork to optimize and future standardization of processes (Seliverstova, 2014). In this topic we will deeply go through two of improvement tools in order to give an idea about the difference in improvement methods.

4.1 The need for Improvements

There are many internal and external reasons for improvement process in the market today:

The first reason is that the performance of most processes in the companies has a tendency to slowly go down over a time if it is not maintained. This means that even for supporting the current standards it needs to spend some amount of work for service maintaining. In addition if the company wants to improve and update the processes, it will require not only maintain but also an additional efforts.

The second reason is that in case the organization is not improving its processes, then it can be sure that it is actively engaged by its competitors. If even we imagine the situation where the improvement is not engaged by any company or its competitors, there will be always a third person who will decide to take this market segment.

The third reason is that modern consumers are becoming more and more demanding and even spoiled. The level of supply and quality is growing all the time. This leads to a rapid increase of expectations by consumers. It is important to follow the expectations and be able to match them with an offer (Bjørn, 2007).

The next stage follows after Business Process Modeling is implementation of necessary improvements based on the decisions from model analyze. By carrying out the project for improving the business processes, the next question can be faced: how deep the business processes need to be changed. The answer to this question will lead to two possible approaches, such as: Business Process Improvement and Business Process Reengineering.

4.2 Business Process Improvement tool: Lean Management

Lean Management (Lean production, Lean manufacturing) is an approach in managing an organization aimed at improving the quality of work by reducing losses. This approach applies to all aspects of activities from designing and manufacturing to marketing.

Principles of LM have been developed by Japanese companies in the late 1980s and early 1990s.

Lean systems approach aims to reduce activities which do not add value to a product throughout its life cycle (Bjørn, 2007).

Like most Japanese approaches to management, Lean manufacturing can be viewed as a philosophy and as a system and as a tool. Principles of Lean imply a permanent long-term work to improve quality and reduce losses.

Implementation of the principles of lean manufacturing is based on the developed methods (Gordeev & Borisov, 2009).

4.2.1 Main principles of Lean Management

To implement Lean Management, the principles of this system have to be understood. They are quite simple, but require a great effort from the organization.

Basic principles of LM can be summarized as follows:

- Determine what creates value of the product in terms of the end user. An organization can perform many actions which are not important to the consumer. Only in the case when the organization knows exactly what is necessary to the consumer, it can determine which processes are dedicated to providing the consumer values, and which are not.
- Determine the necessary steps in the chain of production and eliminate losses. In order to optimize performance and to identify

losses it is important to describe in detail all the steps from receipt of order to delivery of products to the consumer. This makes it possible to determine the potential for improved processes.

- Rebuild the chain of production steps so that they represent a workflow. Actions in the processes necessary to build in such a way that between the operations would not be downtime or other losses. This may require re-engineering processes and new technologies. All processes must consist of actions that add value to the product.
- Do only what is necessary to the final consumer. The organization should produce only those products in a certain amount which is necessary to the end consumer.
- Strive for excellence through continuous reduction of unnecessary actions. Implementation of lean manufacturing cannot be a one-time event. By implementation of this system is necessary to constantly improve the work by finding and eliminating the waste (James, Esseling, & van Nimwegen, 2002).

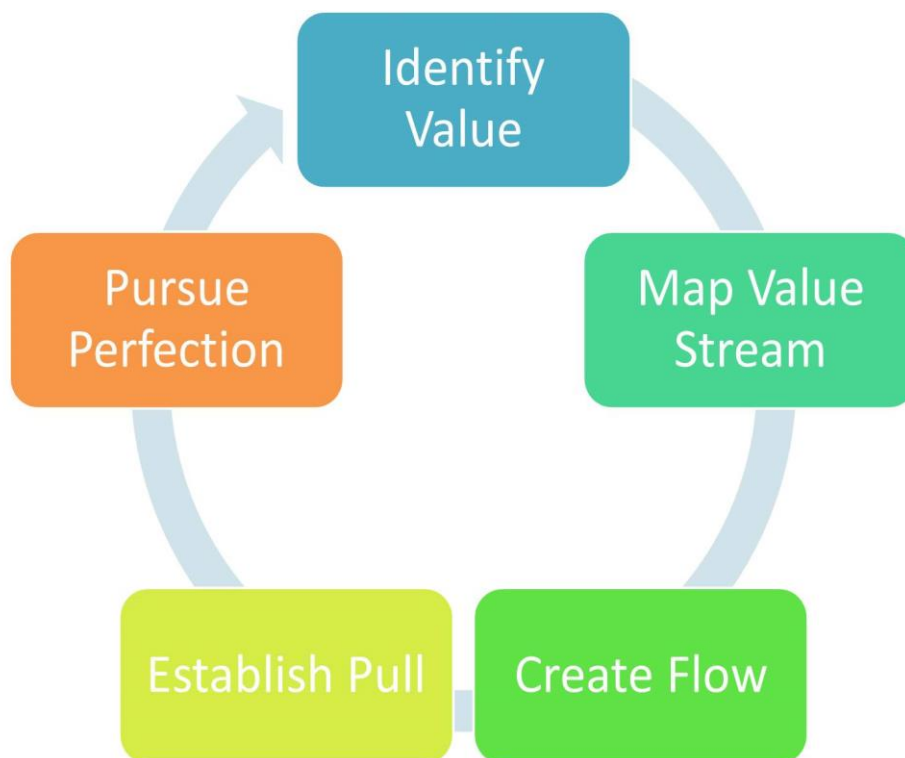


Figure 7. Principles of Lean Management (Illustration of Project Dynamics: Clipart Me Web site, 2005)

4.2.2 Tools of Lean Management

Lean Management is a logical development of many management approaches established in the Japanese management. Therefore, the system Lean includes a large number of tools and methodologies of these approaches. It is difficult to list all this tools and techniques especially that part of the tools which are used depends on the conditions of the specific tasks of a particular enterprise. Basic tools and management approaches, which are part of lean manufacturing tools, are listed below:

- Just in Time - an approach to the management of production based on consumer demand. It allows producing the right amount at the right time.
- Kaizen – an approach to managing an organization based on continuous quality improvement. In this approach, employees regularly and actively working to improve its operations.
- 5S – is a part of the Kaizen approach. It is also the methodology of improvement. It allows reducing the losses associated with poor organization in the workplace.
- Andon - visual feedback system in the workplace. It enables all employees to see the state of production, it warns when someone need help, and allows operators to stop the production process in case of problems.
- Kanban – is a system of controlling the flows of materials and goods within the organization and outside of it with suppliers and customers. It allows reducing the losses associated with stocks and overproduction.

Many of these approaches and tools can be used separately, but in the concept of lean manufacturing their combination gives more significant results. The combination of techniques, tools and approaches support and reinforce each other.

4.2.3 Improvement Process/ Cycle

PDCA (Plan-Do-Check-Act - planning-action-check-adjustment) is a repeating the decision making process used in quality management, also known as the Deming Cycle, Figure 8. PDCA methodology is the simplest algorithm of manager's actions to manage the processes and to achieve its objectives. With continuous checks before, during and after the manufacturing process, with trainings of responsibilities for quality and, above all, with a constant audition for continuous production process can be discovered numerous weaknesses in different processes inside the company. PDCA is used to detect the causes of failures and to support the whole process up to the elimination of defects (Seliverstova, 2014).

Plan- It means setting objectives and the processes which necessary for achieving the objectives; planning of work for achieving the targets of processes and customer satisfaction; planning, allocation and distribution of resources.

Do- It means transformation, approbation, testing and optimization of the previously adopted the concept of using a readily achievable and simple tools.

Check- It means a control and carefully rechecks of implemented processes results for wide improvements this processes in future as the new standard.

Act- In this step, a new concept is being implemented documented and regularly checked its compliance. Such action may include large changes in the structure and running processes. Improvements start again from step planning.

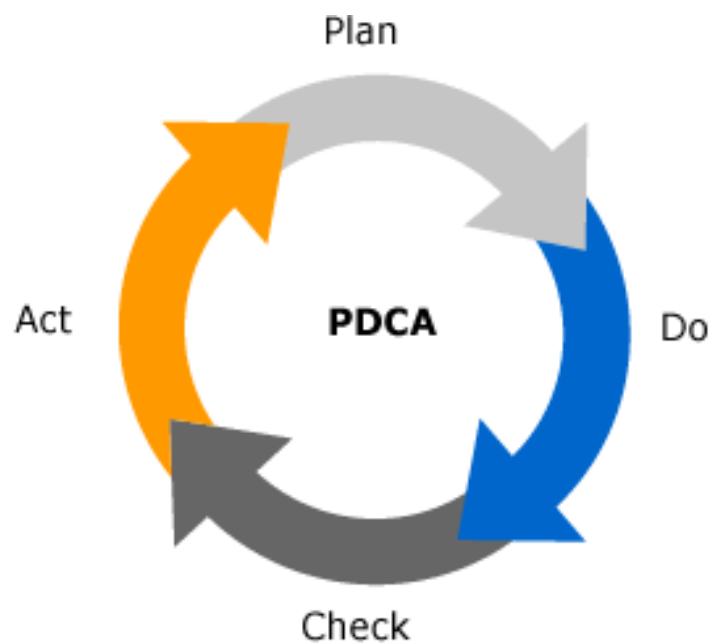


Figure 8. PDCA (Monitoring, reviewing and enhancing an AML/CTF program, Continuous improvement: Commonwealth of Australia Corporation, 2009)

4.3 Business Process Improvement tool: Six Sigma

Six Sigma is a popular management concept aimed at improving the quality of the organization. This concept was developed in 1980 by Motorola in order to reduce deviations in the production of electronic components. This concept was based on statistical process control methods, and on the work of Japanese expert in quality Genichi Taguchi (Seliverstova, 2014).

Nowadays Six Sigma is regarded as a philosophy, methodology and a set of tools to improve the work. It is used in organizations in different areas: industrial plants, hospitals, banks, transnational corporations and etc.

Six Sigma term which used in the title of the concept means a random standard deviation from the mean value. This term is used in mathematical statistics. Random variable can be characterized by two parameters - mean value (μ) and a standard deviation (σ). The essence of the concept of Six Sigma is to apply a variety of methods and tools of management processes to reduce the standard deviation for a given tolerance (KPMS, 2007).

4.3.1 Key elements of Six Sigma philosophy

The first element is customer satisfaction. Consumers determine the level of quality of work. They expect high quality products, reliable, adequate price, prompt delivery, good service and so on. In each element of consumer expectations hidden quality requirements can be found. The organization shall identify and meet all these requirements.

The second element is definition of processes, their performances and methods of managing these processes. To improve the quality of work it is necessary to observe the process from consumer point of view. The elements of the processes which are not bringing value to consumer should be eliminated.

The third element is a teamwork and involvement of staff. The results of the organization are the work of its employees. In order to achieve a high quality, each employee should be interested in the work and in achieving high results. Engaged employees leads to increased customer's satisfaction (Vendrov, 2004).

4.3.2 Key elements of Six Sigma methodology

Six Sigma is a process-oriented methodology aimed at improving performance. It allows to improve all areas of activity. The methodology of Six Sigma has three interrelated elements: Improvement of existing processes; Design of new processes; Process management.

For improving the existing processes the approach of gradual improvement is used. It focuses on reduction of defects. The main target of Six Sigma concept is to eliminate shortcomings in the organization and execution processes.

Improvement is carried out through the use of five consecutive steps. These steps are called by DMAIC (Define, Measure, Analyze, Improve, and Control) (Seliverstova, 2014):

Define - this step defines the main problems of the process, the project team of Six Sigma is formed to improve the process. The team is endowed with the necessary powers, resources to work and a set of responsibilities.

Measure - at this stage, all the data of the implementation process is collected. The team analyzes the collected data and brings preliminary assumptions about the reasons for arising of deviations in improved process.

Analyze - during this step, the team checks the preliminary ideas about the causes of deviations in the processes, determine all causes of inconsistencies and suggests methods for addressing the identified causes.

Improve - at this stage all the methods of improvement are designed and their implementation is held.

Control - this step involves documenting and standardizing of the improved process. In order to test the effectiveness of the activities by the project team Six Sigma performs control and monitoring of the implementation process. During the monitoring, special attention is paid to checking of elimination of nonconformities.



Figure 9. Six Sigma (Illustration of cycle indicating process improvement: Clipart Web site, 2006)

4.3.3 Implementation of Six Sigma

The introduction of the concept of Six Sigma in any organization is based on the constant work of project teams. Teams are formed by levels of management. As a rule, these levels are only three - the highest level of control, process control level and the level of control of the individual tasks. The team consists of experts with different "degree of ownership" concept of Six Sigma.

Seven degrees of ownership of this concept are listed below:

- Manual - this top management and business owners. The task of leadership is to create conditions for the introduction of the concept of Six Sigma.
- Champion – it is usually a representative of senior management in the organization. The task of champion is to determine the necessary projects for improving the processes, their organization and monitoring of performance.

- Master Black Belt – the task of this belt is to develop the concept of each improving project. He identifies the key characteristics of the processes, conducts training of black and green belts. Master Black Belt is the "technology" of the concept of Six Sigma and internal consultant.
- Black Belt - directs the project team to improve individual processes. This belt allows providing the trainings of project team members.
- Green Belt – this belt working under the direction of a black belt. It analyzes and solves the problem, taking part in projects for improving the quality.
- Yellow Belt - in the project it addresses specific problems, it responsible for the implementation of small projects into improvement process.
- White Belt - is responsible for the solution of individual, specific objectives of the project Six Sigma (KPMS, 2007).

At the present stage of development of Six Sigma concept it has become a well-known and popular brand. Promotion of the brand promotes the trainings of specialist's on different levels of "ownership" by Six Sigma methodology. For each of the above degrees of Six Sigma developed a specific training programs and requirements for the composition of knowledge, experience and qualifications.

5 Business process Reengineering

Business Process Reengineering is a radical rethinking and redesign of business processes to achieve sharp and radical improvements for performance of the company, such as: cost, quality, and service.

Reengineering of business processes in enterprises is used when it is needed to make a decision for the reorganization of activities or a radical transformation of business. The company seeking to survive or improve their position in the market must constantly improve production technology and ways of organizing business processes (Shirtladze, 2014).

5.1 Main characteristics of Business Process Reengineering

Expanding this definition into elements, we receive four key features that characterize the reengineering and distinguish it from other business improvement programs.

The first characteristic of reengineering is fundamental. It means that during the re-engineering of business processes not only business processes are affected and changed, but also the foundation or the whole strategy of the organization.

The second characteristic of reengineering is radical. It means that after the re-engineering of business processes schemes "as is" and "as to be" are very different and have nothing in common.

The third characteristic of reengineering is essential. M. Hammer and J. Champy define reengineering as the changes that increase the key performance indicators of business in several times.

There is always a question where is the boundary between continuous improvement and reengineering. If we observe the examples of reengineering that lead Hammer and Champy, then they have achieved the following results for improvement:

Reengineering of business processes in the company "IBM Credit" has led to the growth of labor productivity by 100 times and reduce process time by 10 times. During the reengineering in the company "Ford", the number of suppliers

for payment of bills reduced from 500 to 125 and the productivity increased by 4 times. In the third example of business process reengineering design new camera in the company "Kodak" the results achieved to reduce process time in half (Champy & Hammer).

Therefore, we can assume that the boundaries of reengineering are the following values 50%, 75%, 90% or more, measured from the beginning of the process reengineering. In the case of continuous improvement the values are 5 - 20%. With regard to the time period in which the listed improvements have been made, it is 6 - 12 months.

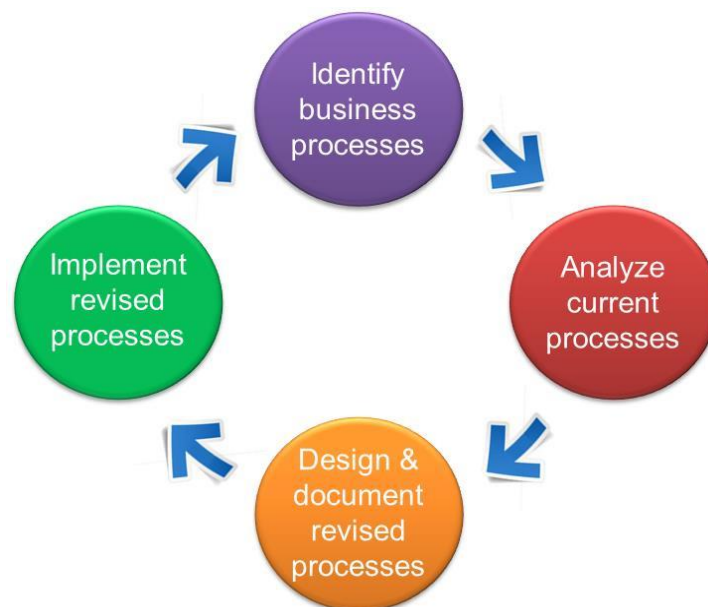


Figure 10. Business Process Reengineering (Pictures For (Business Process Reengineering): PixGood Web site, 2005)

The last element of reengineering is a business processes. The BP is the main issue which is changed during BPR. This is the main difference between the reengineering and for example restructuring, in which the object is to change the organizational structure. Reengineering technologies are based on the fact that BP is primary goals and organizational structure of the company is secondary goal (Shirtladze, 2014).

5.2 The core differences of Business Process Improvement and Business Process Reengineering

In this topic the author shortly go through the major difference between BPI and BPR methodologies in order to show the main reasons for choosing an improvement model.

Technologies of continuous improvement and reengineering of business processes are using many of the same elements, methods of analysis and optimization. Between them, there are some differences due to the fact that one approach is evolutionary and the other revolutionary. The differences are mainly in the areas of organizational adoption of these technologies.

Table 1. Differences between BPR and BPI (Mehta, 2011)

| | Reengineering | Continuous Improvement |
|---------------------------|-------------------------|-------------------------------|
| <i>Differences</i> | | |
| Level of change | Radical | Incremental |
| Starting point | Clean slate | Existing process |
| Participation | Top-down | Bottom-up |
| Typical scope | Broad, cross-functional | Narrow, within functions |
| Risk | High | Moderate |
| Primary enabler | Information technology | Statistical control |
| Type of change | Cultural and structural | Cultural |

5.2.1 The differences in the changes

The first element of differences is level of changes. During the reengineering process the changes produced by a single time, but very significant. They seriously change the structure of the business processes and lead to a substantial improvement of its performance (Sinha, 2012). With continuous improvement, only minor changes are made that lead to small improvements, but they are carried out repeatedly and continuously.

5.2.2 The differences in the mechanisms of implementation

For conducting a business process reengineering it needs to be used a project form of management because the reengineering is a one-time project. On the contrary continuous improvement must be maintained constantly by operating system. The companies which implement the technology of continuous improvement create permanent structural units responsible for the maintenance of these technologies. These units have different names - Division for Organizational Development, Division of Technology, Service Quality, etc. They conduct ongoing monitoring of business processes, analyzing them and organize activities for their improvement (Sinha, 2012).

5.2.3 Differences in the description of business processes "as is"

The third element, on which there are differences, is the depth descriptions of business processes "as is". The reengineering does not need to be described because they will be changed greatly. With the continuous improvement the business processes are improved with small steps at a deeper level. That is why before their analysis and development it is necessary to build more detailed models of business processes "as is" (Informational portal of economics, 2007).

5.2.4 Differences in the participation of the first head

The fourth element of differences between reengineering and continuous improvement is the degree of participation in the improvement of the head manager. During reengineering the participation of the head manager must be significant. This means that the first leader must be a member of the project team reengineering, and it requires that manager spends at least 20% of its time in that project, because of the big scale of changes. With the continuous improvement a head manager needs to participate much lower (Seliverstova, 2014). He can take part in workshops, allowing encountering the problems,

conflicts and disputes in business process optimization. One of the main elements of the technology of continuous improvement, which is seen as an advantage over the form of reengineering is that participation of the head manager in this model is not required. This allows building a cultivator organization that will improve them independently, adjusting their activities under changes in the environment (Gordeev & Borisov, 2009).

5.2.5 Differences in initiatives

During BPR initiative changes must go "from above." It goes down by the first head of the organization and it is non-negotiable. With the implementation of continuous improvement in the organization a mechanisms changes go "from below and supported "from above."

5.2.6 Differences in control

During the reengineering, which usually accompanied by "breaking" of business processes it needs tough and unpopular management. New schemes of business processes "imposed" to a company "from above." According to the principle of seniority, different variants of measures to change processes are discussed, but the right to make the final decision remains to one person - the head of the organization. With the continuous improvement it used the form of work in which decision is made by the principle of "minority" (Bjørn, 2007).

6 CASE: Modeling and optimizing of business process in Wim Bosman

6.1 Project description

The project was originally initiated by the company's general manager who saw the need in radical improvements inside the company.

At the whole beginning of the project work it was agreed to form a certain team who would help the author with collecting and sorting information and would discuss every steps during the project. A project team consisted from: General Manager, Head of Sales Department, Chief Accountant and the author. We agreed that the project aims will be to create a certain business process model which would standardize and sort all the company's processes, discover the space for improvements, and methods of implementing them.

Every employee knew that there are problems and difficulties in processes but they have been working with it so long that they stopped noticing or paying attention to them. A crucial moment which led to the need of changes came when the main client of WB stopped working with a company and chose another partner. It has showed that there is a strong need in increasing a customer's satisfaction and look for problems inside the company.

To identify poor processes and optimize them Business Process Management approach was chosen. The project team decided that BPM is exactly what is needed in a company. The reason is that BPM is a modern way of implementing business strategies and improving the overall efficiency of the organization. All the benefits and key steps were discussed in chapter BPM. The author used BPM Lifecycle 6 steps showed in 2.5 chapter: Design, Analyze, Execute, Monitor and Optimize. Before going to this model it was decided to create a vision map of the work.

6.2 Vision

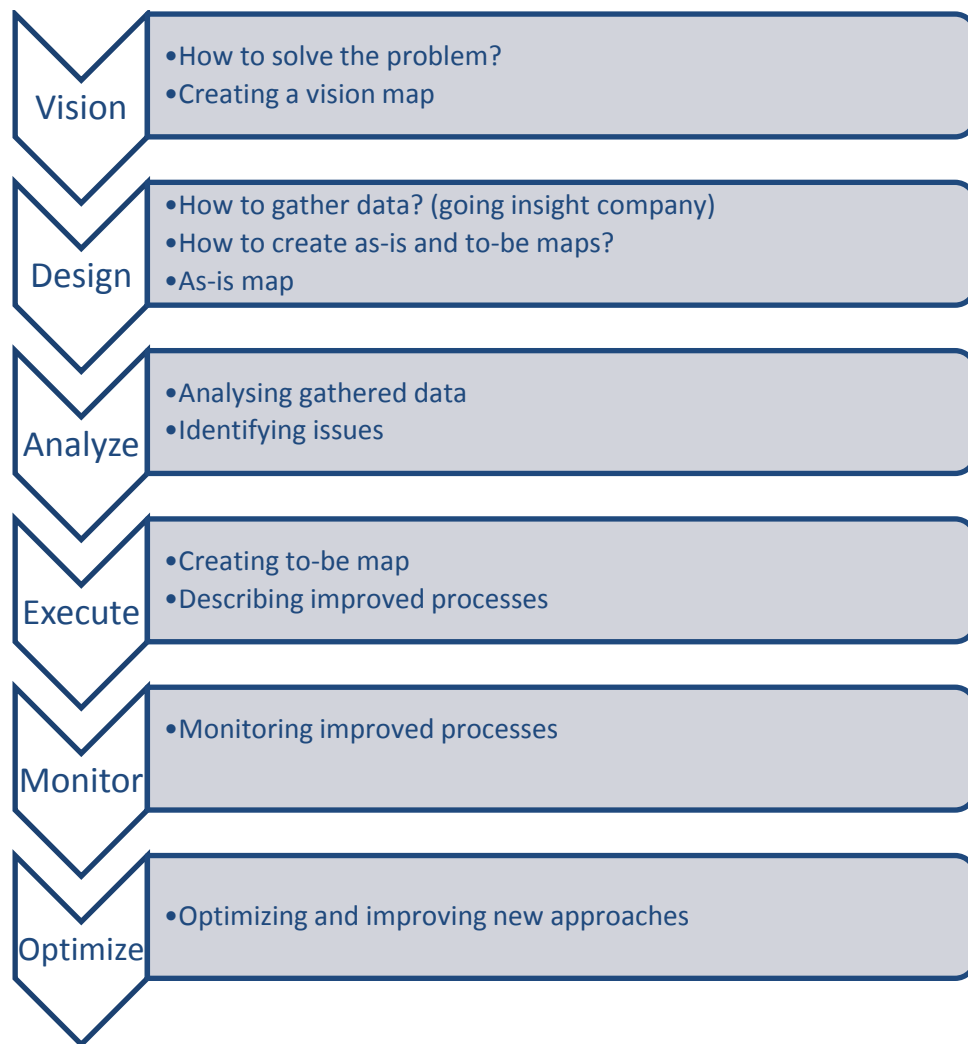


Figure 11. Vision map

The author's main target was to take a look on the current situation with a fresh sight, to collect complains and suggestions which exists in the company and to build out of it the processes which would change the current situation to the better side.

The beginning of the project took place in a Vision phase where it was important to make a structure of a research. Figure 11 is showing all needed steps to be made with small descriptions.

6.3 Design

6.3.1 Collecting Data

The first step was gathering a data to measure the productivity of each process. Most of processes became a routine for every employee so that without write measuring it is hard to find the problems. In order to measure the processes built in the model it is important to correctly and accurately collect the information from the employees about its productivity. For collecting the information for the future processes map it was agreed to use Qualitative research described in chapter 1.3 and field noted since it was the most useful and informative way to gather data. There are different ways of collecting data in Qualitative research. For this project the author chose Questionnaires. Questionnaires allows detecting and identifying the possible types of risks and problems in the project, also identifies and describes the causes and factors which influence on the level of this type of risk. As a tool of such an analysis the questionnaire have been prepared and used for collecting all the necessary information for measuring the productivity of “as-is” model’s processes. All the employees were separately interviewed and asked the questions from Table 2.

Table 2. Questionnaire for employers

| Questionnaire for employers | |
|-----------------------------|--|
| 1. | What are your main processes? |
| 2. | At what point does the responsibility turn to and from you? |
| 3. | Which processes do you think are not effective? |
| 4. | Which technology do you use for your processes? |
| 5. | At what process is the biggest probability of mistake exist? |
| 6. | Where do you think the space for improvement exists? |

Creating questions was a complicated task to make them in way to collect the right information. The questionnaire was developed to understand different point of view from various departments. These questions helped to collect the

full image of processes done in a company. There were many hidden issues discovered during these interviews because usually there are many extra processes which are not visible to the head of the company. This questionnaire allowed to see what every employee is really doing, how he or she is really doing their processes, in what way are they doing it, what is the double work do they do, which spaces for improvements exist, what are the ways to improve them. During the Design stage every employee inside the company was interviewed in order to collect the information about mistakes, problem and points from every sight.

6.3.2 Creating As-is model

In chapter 2 the key needs and methods for modeling the processes are described and discussed. Within the team it was agreed to choose a certain program and also a certain diagram for building the processes. The main priority of choosing diagrams and tools were the convenience in use and simplicity in understanding, because it is important that every employee will be able to understand and if it is necessary to change the processes.

In chapter 3, the author presented the theory behind two improvement methods such Business Process Reengineering and Business Process Improvement, their main tools and also the comparison between them. The project team reviewed differences between two improvement methods and their tools were analyzed. It was agreed that BPI methods suits more than BPR, because the company does not need such a radical changes in its processes which are presented in BPR method. The reasons is that the General Manager was interested more in improving an existing processes. Moreover BPR takes much more risks and while the economic situation in Russia is very unstable it is not reasonable to create new threats.

For the defining the causes of the problems and sorting them out the author started from modeling the business processes and developing an “as-is”

workflow map. This stage allows defining the next steps: the performance of current processes, determining the start point or baseline of the process, understanding the root cause of the processes (Ruth, 2003).

During this stage it was agreed with a project team to use one of the Business Process Management Suite called Microsoft Visio. During the studies in JAMK University the author already had a chance to experience this program, so it was very easy to start using it again. Microsoft Visio is a powerful graphical tool for presenting various charts and diagrams. With this program it is easy to create process models and to show a complex data in a convenient way. The importance in choosing the tool for modeling was in ability of every participant of this project to use this program and make any changes in any time they need (Ruth, 2003). Since the company is developing and growing every day the processes and responsibilities are also changing rapidly needed to be considered every time.

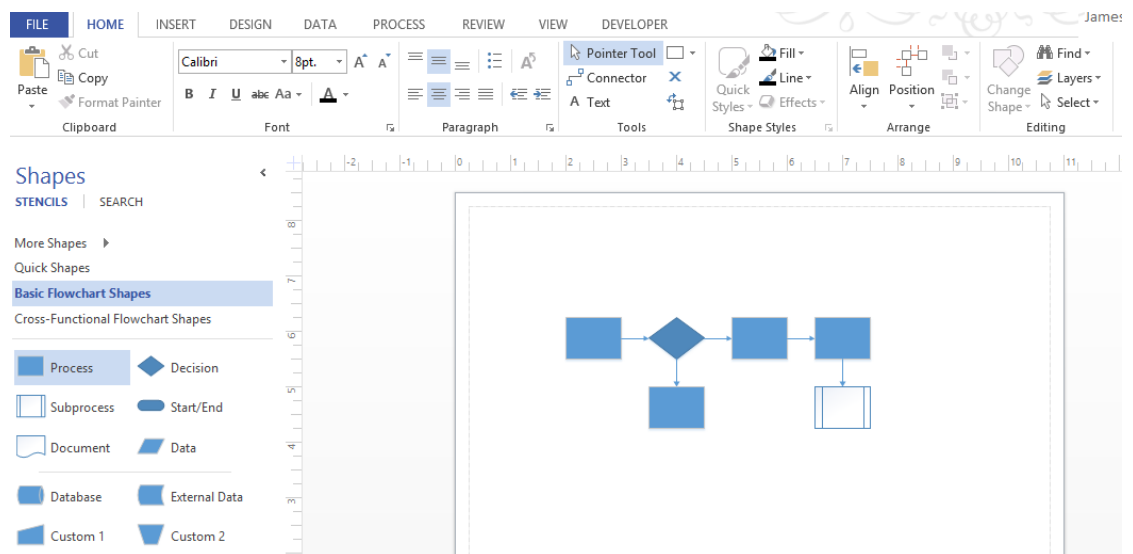


Figure 12. Example of working in Visio

As a graphical design inside the Visio tool our project team has used Flowcharts Diagrams since the graphical design of it is very convenient and easy. With a team it was agreed to choose an icons of a basic BPM diagrams but during the modeling phase team decided to modify an existing ways to diagram the processes and to create our own. The meanings of the figures inside the diagrams were changed and adapted to the company's needs. Based on the

answers to the questionnaire it was possible to create an existing template of the process ongoing in the company at the moment. Every employee had a chance to make the input in the model “as-is”.

During the stage of modeling the workflow of the company there were identified two key departments which are leading the company’s processes: Sales department and Operational department. These two departments are the leading workforce of the whole WimBosman company. All the rest of processes are supporting these two departments. The core processes of Sales department can be seen on Figure 13.

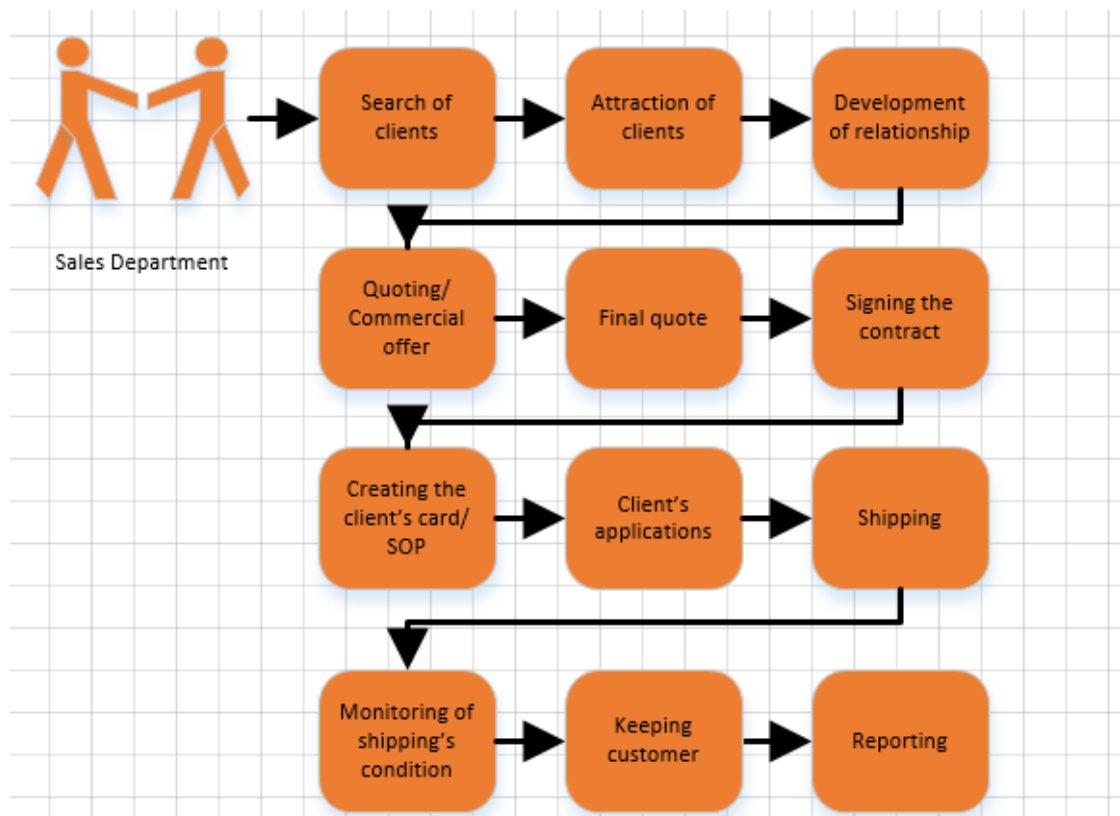


Figure 13. Core processes of Sales department

As it is presented on Figure 13 all the company’s work take start from searching and attracting the client by the sales manager. They can search it through the internet or by the exhibitions and attract them through the cold calls, presentations or through the personal meetings. After an initial agreement with a client it comes to the development of relationship through finding out what

client want and what can we offer back. If client decide that the service which we can offer is exactly what they need it moves to the commercial offer and quoting of the services which client want to receive from us. The quoting processes is supported by many sub-processes which can be seen in as-is model in the Appendix 1. After giving the final quote to the client both sides are signing the contract for the future services. Then client sends an application with a first transportation details or information so that all the shipping process start and the sales manager can transmit the information to the operational department. The rest of work for sales manager includes monitoring of transportation and keeping the contact and developing of relationship with that customer and also reporting about every work done to the head managers. On the process of shipping the cargo all the information transmit to the operational department so they can start work on processing this shipping and solving all the problems to the end user. The main processes of operational department are below on Figure 14.

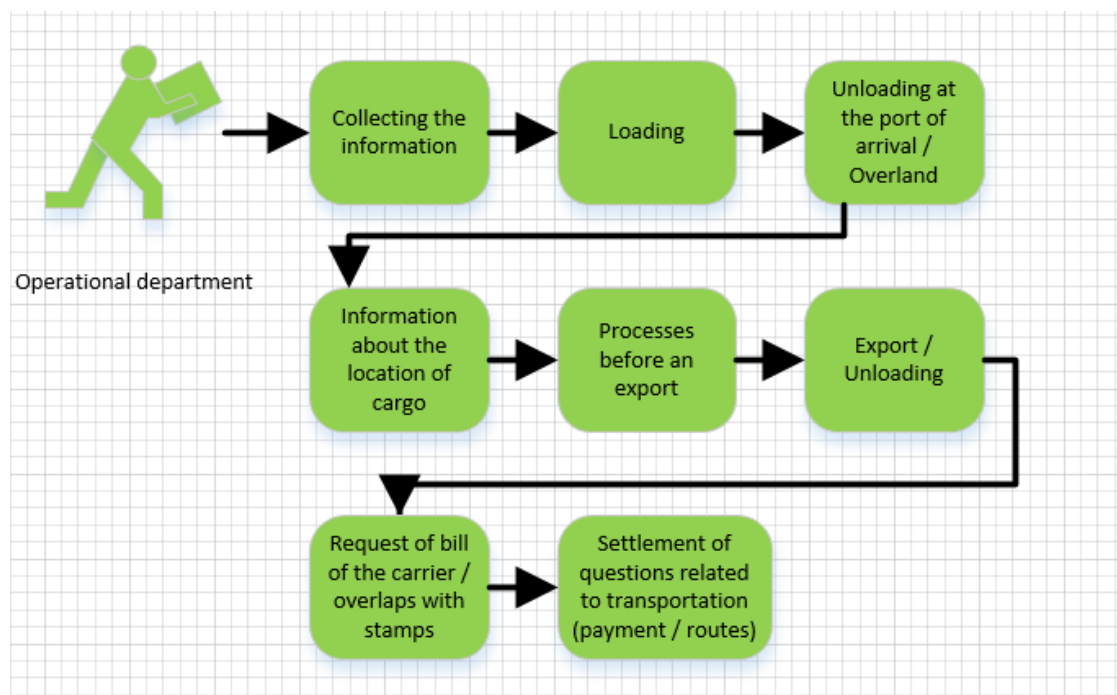


Figure 14. Core processes of Operational Department

All the work of operational manager start from collecting the information personally from the sales manager or straightly from the customer by the mails or calls. After receiving all the needed information manager can proceed to the

loading the cargo to the truck either to the ship at loading point. Then manager receives a cargo at arrival point and if it is goes by ship manager should organize more transporting services from the port to the door of the customer. The work of an operational manager is based on organizing all the cargo used during the shipping and also preparing all the needed documents for proceed it during the customs clearance and other intermediate stops. Figures 13 and 14 showing main processes together without intercepting with each other. It can be considered that there are not many of them but they are supported by plenty of sub-processes which usually create a certain need for optimization. Because of the significant amount of sub-processes it is very hard to keep them right and be done always in the right way.

6.4 Model

After the collecting a full data about the current situation in processes we compared the vision of the general manager of the WB Company with a vision of employees on the same processes. Based on this small research we could clearly define that there are many processes which are done in a different way as it should be. The way of doing the same processes is changing every day so it is becoming hard to sort and create the clear path for each process.

By the head of the company was stated that all the main problems which need to be optimized are concentrated in operational and sales departments because these are two departments which mainly effect on company's result and profit. During the Design stage it was confirmed that most of company's mistakes and inefficient processes are coming from these two departments so their processes needed to be improvement otherwise the company will continue working without benefit. This stage showed the main area where to dig deeper and which processes need to be analyzed the most.

As it was discussed the vision of the company's Head about the processes work was different from the reality. Many existing processes were not standardized

and every employee could do the same process in the same way. Since the process were not standardized there are many double work has been done every day. From now by mapping the current process it is easy to see and say what problematic zones exist in the company at the moment. At this phase the author started to analyze all the measured processes from the previous part.

During this stage all the defined and measured processes were analyzed and the key factors which cause problems were discovered. The author found that inefficiency of a company comes from the next reasons:

1. Unstructured information about the clients, conditions, rates and quotes.

First problems come from bad structured information about the client, conditions, rates and quotes. Many of such information is kept and transmitted between employees in simple letter via Internet. Even though Wim Bosman has the special data systems for collecting and storing such information they aren't being used. Usually it happens that if any department inside the company or an internal client needs some kind of information from a certain department, this department needs to start collecting this information from the beginning or look for it in the hundreds of e-mails. In most cases this information is getting lost so employees do the double or even triple work. It causes spending time for nothing.

2. Difference in formatting documents.

The second problem is that many of the daily tasks like posting statuses about the transport location, preparing and sending applications for the carriers and agents has a different form for clients. Each client wants its own version of needed document. For operational manager it takes way too much time for such a simple task because for each client he needs to do a special formatting. Also it creates difficulties in transmitting of a client from one manager to another, because every client has its own way to do the usual tasks.

3. Separation in departments.

The third problem appears because of bad cooperation between the departments. The departments of the company has split up on groups and do not cooperate efficiently. There are many situations appear that different departments do not help employees from another departments. It causes offense from the ones who did not receive help. Slowly this offence is growing and causing bigger and bigger effect to the company's productivity.

6.5 Execute

An analysis of processes has shown what is exactly needed to be improved. Figure 15 is illustrating small overview of tasks to be done.

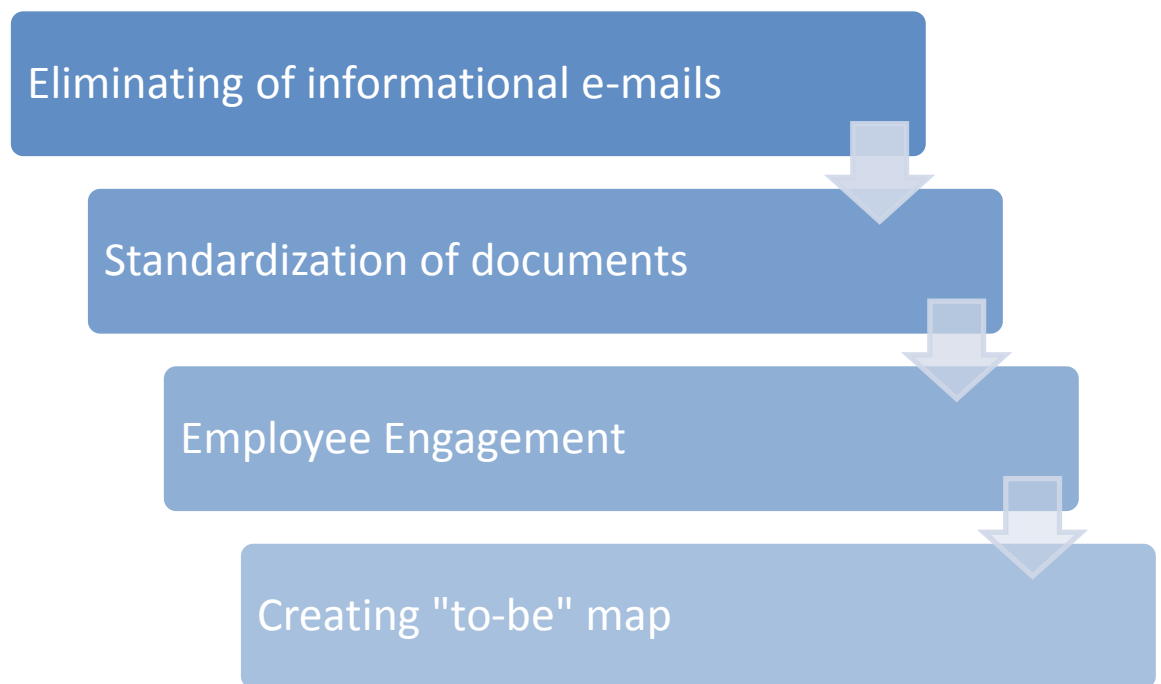


Figure 15. Issues to be improved

As it was stated in the Analyze chapter the main problem appears because of bad standardization of processes inside the company. The processes required a certain map so that every employee could know what to do next without any doubts.

During the Improve stage the author has started to develop “to-be” model. For such a model he offered the next improvement which needs to be considered in this map to make the processes be more effective. Also for making more specified decisions the

author has used brainstorm meetings since an employee's already have their own ideas about the improvement which can be implemented inside the company.

6.5.1 Eliminating of informational e-mails.

First of all it is very important to get rid of informational letters and e-mails with important documents. The information should be kept on the common servers, information tables or special software. An employees need to learn to minimize the use of their e-mail and use it just for communication. Keeping documents in the places where everyone can reach it like company's servers or online storing resources could simplify, improve and make the process of finding of documents in many times easier. Wim Bosman Company already several storing resources for such an information but they are being used because it takes a little more time to post an information there instead of just typing it to the e-mail letter. An employees should understand that even if its seem to be faster and easier to keep an information in e-mails it will cause many useless time spent on looking for this information in future.

On Figure 14 and Figure 15 red arrows are showing an example from an "as-is" model which shows that during the processes there is an option: to put information to the system or to send it by the letter. It should be fixed and the informational letter should be eliminated. Fragments of model "as-is" on Figures 16 and 17 are showing an example that an ability to choose a method of collecting and transmitting information is making the processes more complicated.

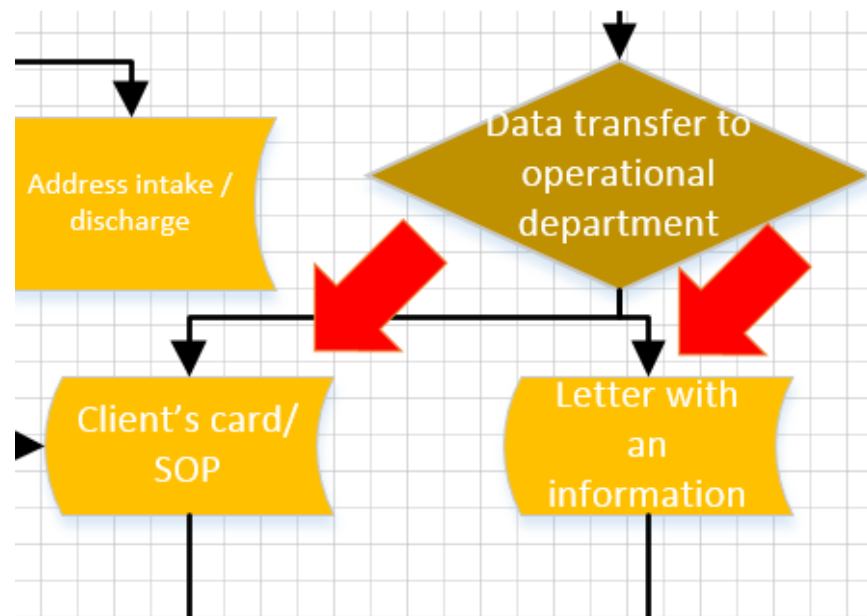


Figure 16. Example of collecting information "as-is" 1

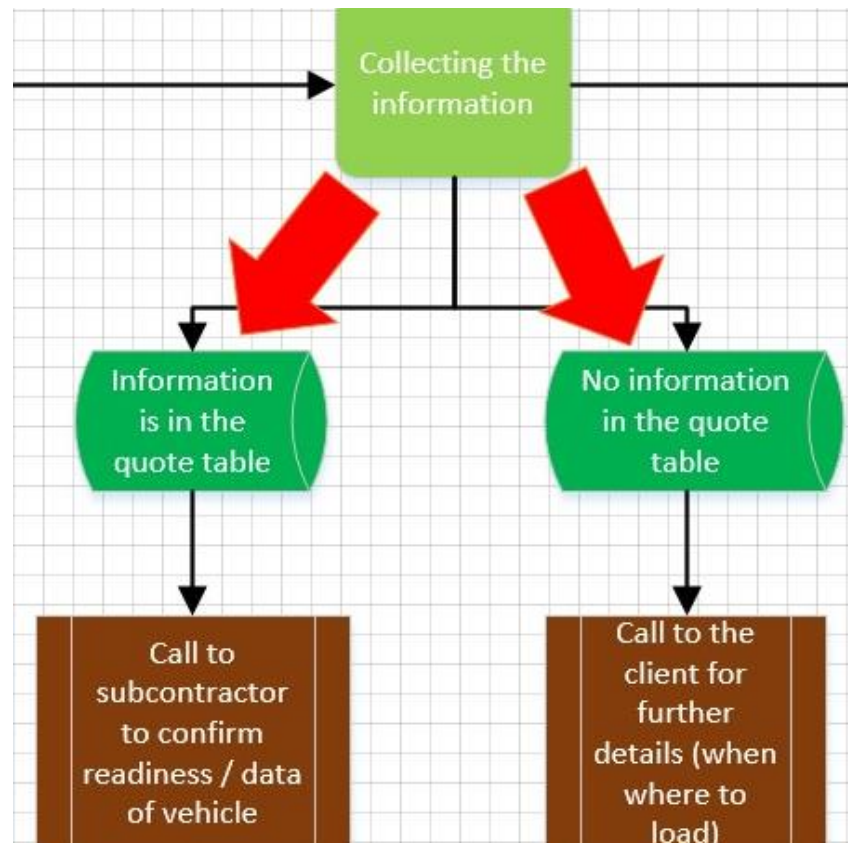


Figure 17. Example of collecting information "as-is" 2

6.5.2 Standardization of documents.

The second solution which could save plenty of time would be a standardization of documents, such as statuses for clients about the cargo's location and applications for the carriers and agents.

These tasks are the most frequent in the daily tasks of operational manager. Since every client want the same information in a different format an employee of operational department spend much more time on doing this routine in many different formats. Also the difficulty caused by unstandardized documents appears an employee for example want to go in vacation and leave the clients for another employee but since all the clients has its own way to do tasks it takes plenty of time to explain it to another employee. Also it causes numerous mistakes and poor-made tasks.

The valuable answer to this problem would be to standardize all this kind of document for each clients, so that the managers would just change the numbers in different documents and that all. It would save a big amount of time.

6.5.3 Employee Engagement

The third solution for the improvement would be a creation of a special team who would take responsibility for preparing different events and activities.

The team spirit in Wim Bosman team is on quiet low level and needs to be stimulated and raised in order to achieve the best productivity. My suggestion would be to launch a special training or indoor and outdoor events which would bring an idea to people that they are not alone and being supported by other people from other departments. Also employees needs to know each other better because for now many employees who were working with each for more than 3 years do know much about each other. The unity of the employees is one of initial factors of success. Without a team work employees do not feel support and start feeling stressed.

6.5.4 Creating “to-be” map

During Execute phase the “to-be” model has been created with a few changes from “as-is” model, but the author thinks this model will help the company to understand the process flow in inside and to standardize it. In Appendix 2 “to-be” map is showing in full size.

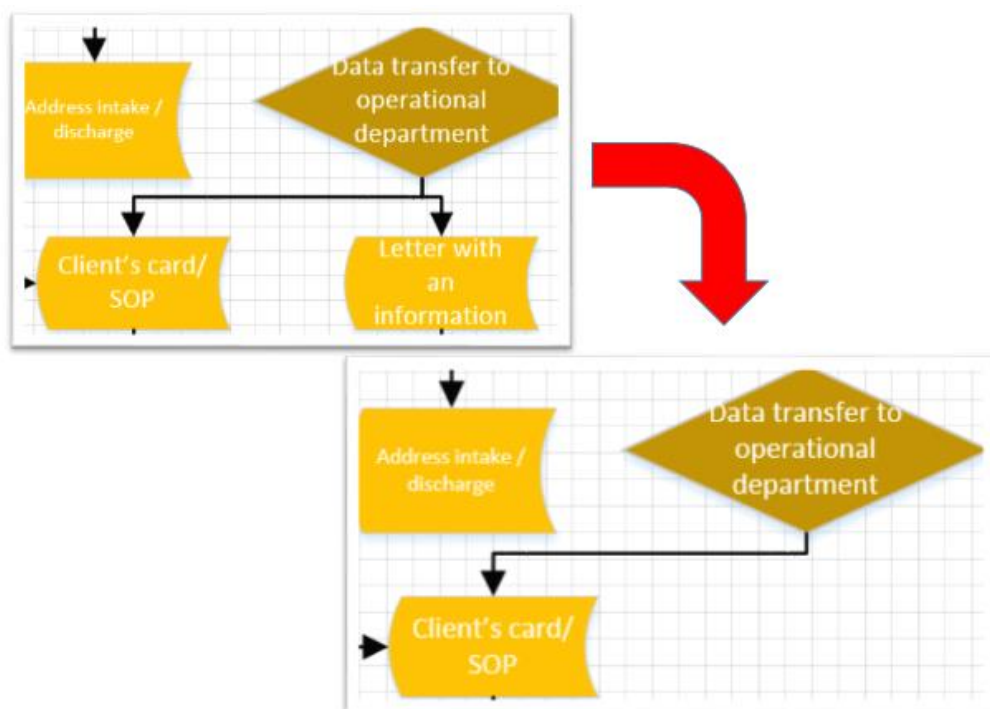


Figure 18. Improvement of Information Input

Some of the improvements were made in “as-is” model. Figure 18 for example is showing how was improved an Information Input. On Figure 19 “not included” information was eliminated from the “final quote”. And Figure 20 is showing how was location of quotes simplified in “to-be” map.

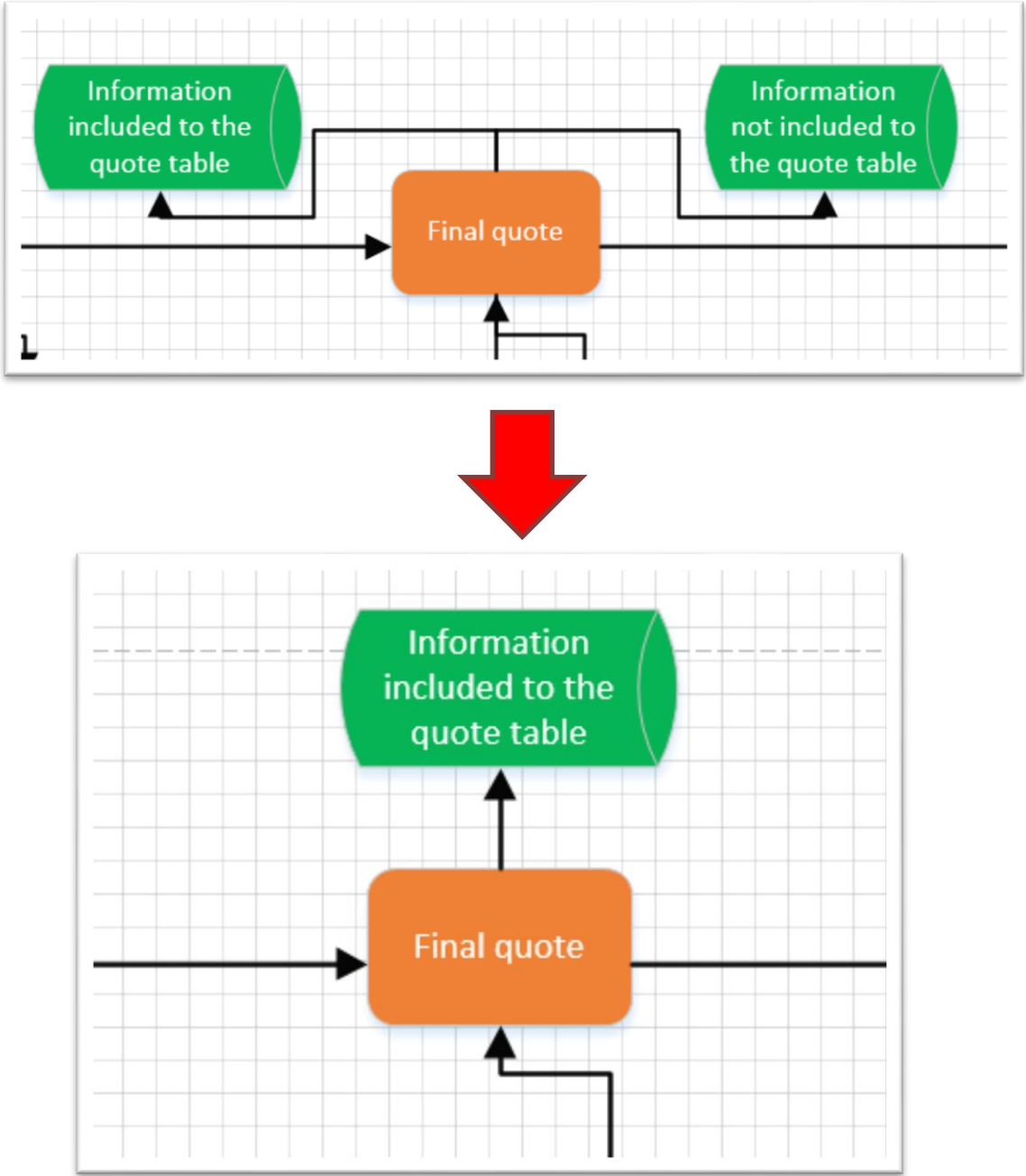


Figure 19. Improvement of Final Quote

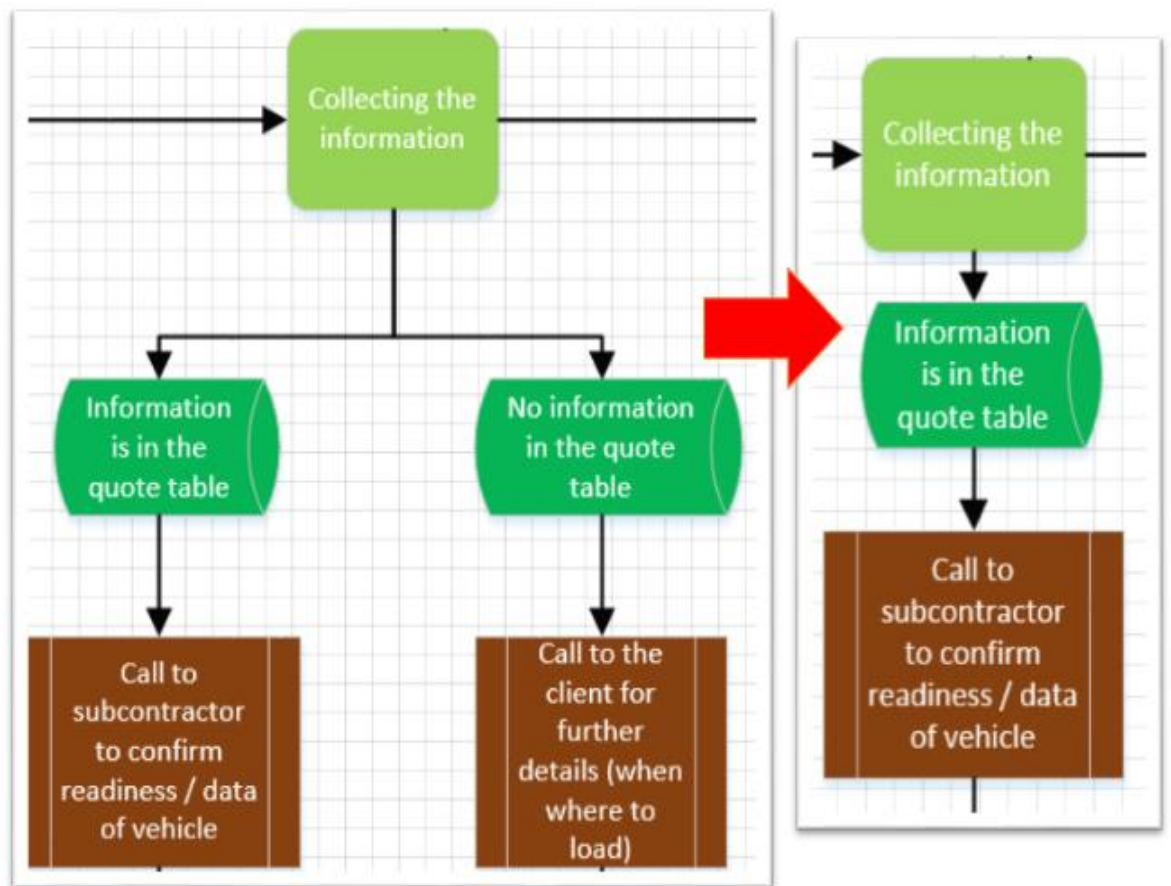


Figure 20. Improvement of Quotes Location

6.6 Monitor

During the Monitor phase it is important to define the tools which would provide the tracking of newly achieved improvement processes and would monitor its performance. It would provide the visibility of processes and its current performance.

Within a project group it was discussed that the company cannot afford for now the monitoring software for controlling the processes performance. It was decided to use the tools which would be easy to implement and which would not take many expenses. There are several steps were agreed for monitoring the performance of processes:

Firstly, an optimization of business processes should continue after this thesis. There should be a responsible person who would take care of the business model and would update it depend on any changes happen in the company. The main idea of the whole improvement and creating of the business model that it should be continuous in order

to help the company to see the possible mistakes and space for the improvement (Miers, 2006).

Secondly, it is important to set the standards for each process in order to know at what point mistakes can happen. For such a need it is good to use Control Charts. They are designed to display signals or warnings of special variation. The advantage of such a chart is that they enhance the understanding of process variation and makes it easier to take an action to improve on-going process performance.

Thirdly, in order to ensure the process is being managed and monitored properly the team must narrow down the vital few measurements if they want to maintain the on-going monitoring of the process performance. This monitoring is accompanied with a certain documentation. Documentation can help to capture the project methods, successes and lessons learned. It is important to keep the company's documentation always up-to-date because the better their final documentation, the easier it will be for process participants to adopt the new way of doing tasks.

Also as an excellent solution for tracking the performance of processes it is important to give the feedbacks by each employee. Collecting and analysing of feedbacks would allow monitoring the processes from the inside by its users. Also it would allow predicting the mistakes which could happen in future.

6.7 Optimize

Process optimization includes collecting data about process performance from the monitoring phase and identifying possible bottlenecks in order to improve it by the reducing of them. Probably this phase is the start of the optimization process from the beginning and returns us to the phase of Design. Optimize phase shows that improvement should be continuous and never stop in order to stay always on the highest performance level. An optimize phase can be supported by the Kaizen philosophy which consist of 5 key elements. For creating a good conditions for the continuous improvement the next 5 elements should be considered:

The first element is teamwork. All employees are required to work as a team to achieve a common goal and the desired improvement in their work. Employees at all levels must do everything possible for the positive feedback of their colleagues and the company. Teamwork involves the continuous exchange of information, mutual learning, timely execution of their duties, etc.

The second element is the personal discipline. Discipline is paramount to success. Kaizen requires that each employee increased their self-discipline in all aspects of

labor - management of their time, the quality of performance of the work, subject to the requirements and regulations, expenditure of material and financial resources, etc.

The third element is motivation conditions. Regardless of whether the company manages to succeed in implementing the changes or not, staff should strive to maintain high morale. Senior management must put into practice work different motivational tools, such as: positive working conditions, merit-based system of incentives and rewards, paid vacation, benefits and payment for medical services, the provision of loans to employees and others.

The fourth element is quality circles. This is one of the fundamental elements of kaizen. An organization needs to organize the work of quality circles. The composition of these circles should include workers at different levels. In the circles of quality employees have the opportunity to sharing ideas, skills, technologies and other important collaborative resources. Exchange of information and cooperation within the framework of quality circles allows employees to assess the effectiveness of its work on the basis of a comparison with the work of others, and thus try to improve its performance.

The Fifth Element is suggestions for improvement. It is necessary to give employees the freedom to suggest improvements regardless of rank occupied by the control system. Offers employees may be any even absurd, and they must all be taken into account and addressed (KPMS, 2007).

By following these steps it is possible to organize the continuous improvement inside the company.

The author suggested the structure on Figure 21 for new improvements for Wim Bosman. Figure 21 is showing the same vision map as in chapter 6.2 with some differences. This represent that BPM circle is using the same approach for funding new improvements and suggestions for a company.

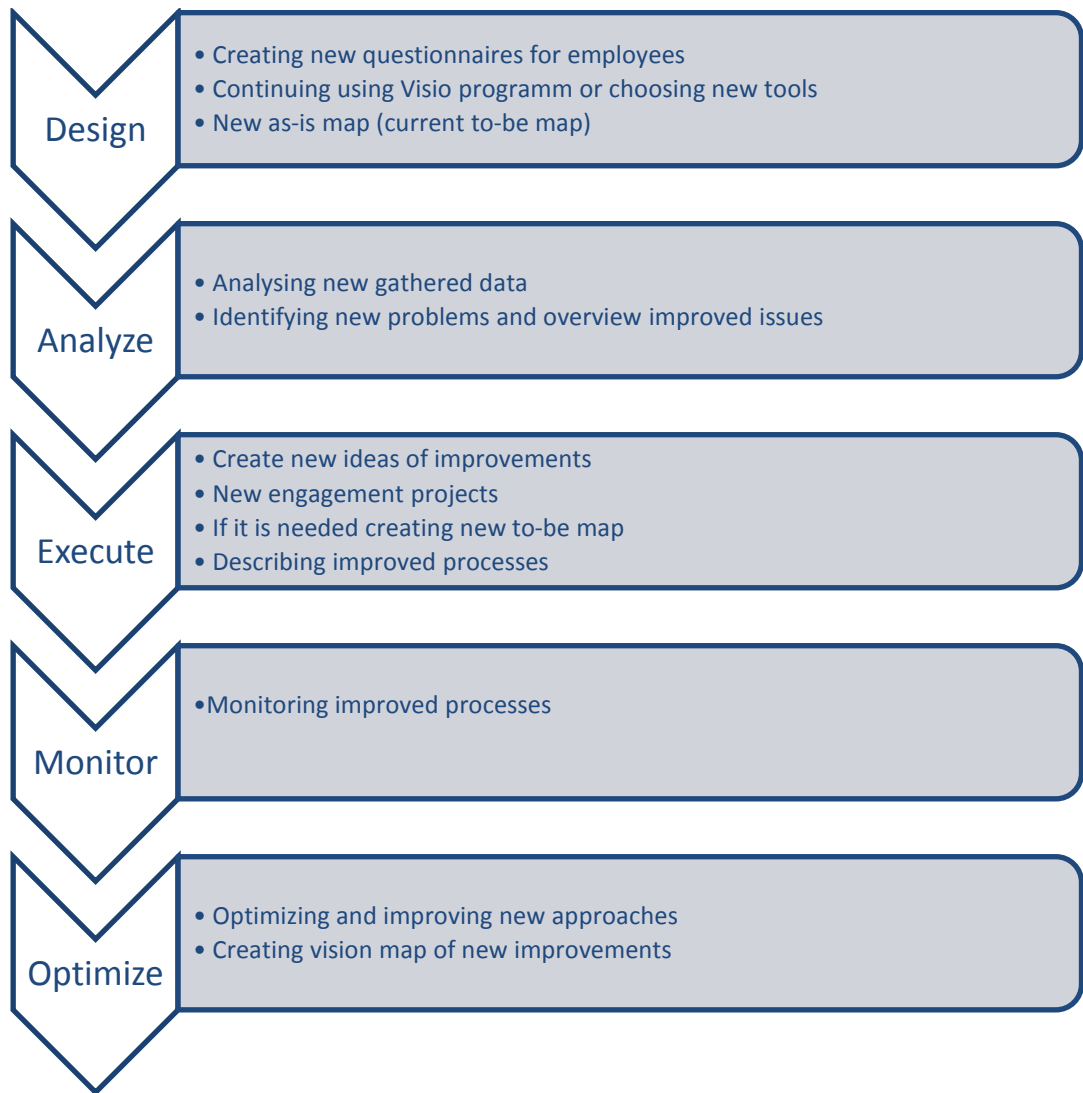


Figure 21. Vision map for future improvements

7 Conclusion

The ultimate purpose of modeling and optimizing of processes is to help the business organization to improve its process in cost, quality and time. The main question of this thesis was:

How to reach the most company's efficiency and improve its current business processes using BPM approach?

The study is appoints the meaning of having the structured business process model in order to see the possible space for improvement. An ability to see the processes on a map allows to directly defining who is doing what in a company and how the efficiency of it can be improved. Visibility of clear roles, data quality, information sharing, and allocation of responsibilities are the key elements in the process management. The company's productivity is directly depending on these factors. Using BPM approach allows sorting all these issues to the shelves, control and continuously improving.

Through the case selection, the author followed the project steps that were made and agreed within a project team in the case company. As it can be seen in chapter 6, the project can differ from the theory. An example of this is the business model which certainly differs from the other modeling structures. They way to build this roadmap were designed by the project team in order to simplify and sort out all the unnecessary information. The rest of the steps, such as following the BPM Lifecycle were followed as stated in the theory.

During this research, the problems of information flow, motivation and poor time-management were found. Every company's employee had a chance to take a word and state about any problems situation. By a very deep analysis all the problems were sorted out and discusses.

As a result, the author found many improvement ideas through the project. The author find the following three the most needed changes for the case company. Firstly is to get rid of unreliable sources of transmitting information, such as information letter. It cases the most of information loses and leads to double work. Secondly is to standardization of company's documentation. Many of the same applications and statuses are done in different manner and cause a loss of time on adjustment a certain document for subcontractors or clients. Thirdly, the lack of team spirit cases the problems with motivation and it needs to improve by constant training and common events. This would increase an employee's productivity in several times.

The main idea of this projects that it continuous after this thesis. The next steps for the project are to follow the control plan and to adjust it to any company's changes. A new process analysis and control charts will be run after the changes done for testing the benefit of the project.

8 References

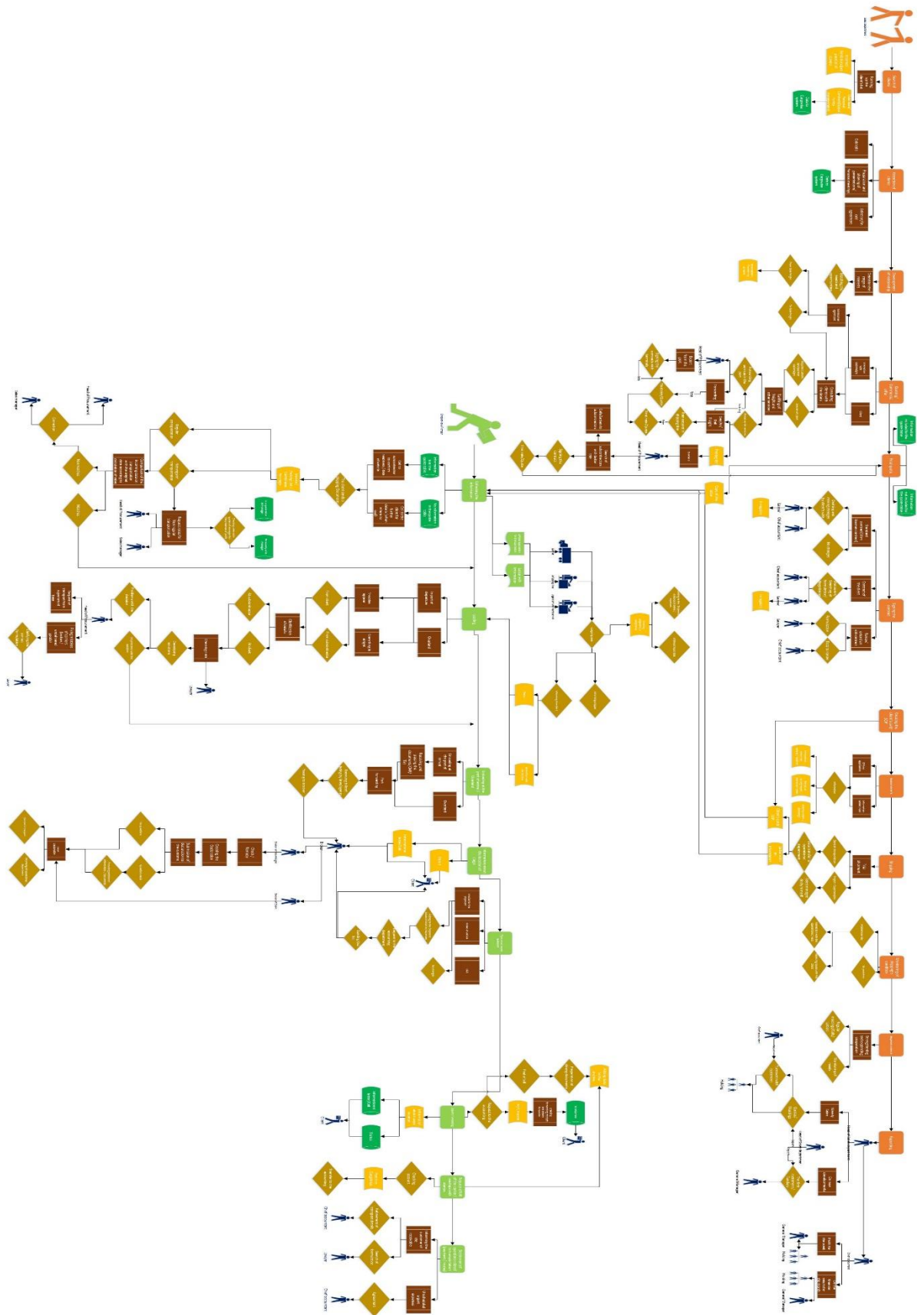
- awserdtfy*. (n.d.). Retrieved from wesrdtfgyuhjkl.
- Bjørn, A. (2007). *Business Process Improvement Toolbox*.
- Champy, J., & Hammer, M. (n.d.).
- Ganesan, E. (2010, September 8). *Server Consolidation - Key Considerations: Infosys Limited*. Retrieved from Infosys Limited Blogs Web site: <http://www.infosysblogs.com/>
- Gordeev, M., & Borisov, A. (2009). Business Process Optimization. Retrieved from <http://quality.eup.ru/DOCUM4/o-b-p.htm>.
- Guide/ How to: BPM Resource Center*. (2012). Retrieved from BPM Resource Center : <http://www.what-is-bpm.com>
- Home / Business Process Modeling: ICT Consultans Blog*. (2009, September 21). Retrieved from ICT Consultants Blog: <http://www.thakursahib.com/>
- Illustration of cycle indicating process improvement: Clipart Web site*. (2006). Retrieved from Clipart Me Web site: <http://www.clipart.me>
- Illustration of Project Dynamics: Clipart Me Web site*. (2005). Retrieved from Clipart Me Web site: <http://www.clipart.me>
- Informational portal of economics. (2007). Retrieved from Informational portal of economics.
- James, H., Esseling, E., & van Nimwegen, H. (2002). *Business Process Optimization. Documentation, Analysis and Management*.
- Kovalev, S., & Kovalev Valerii. (2015). *Director's consultant*. Получено из <http://www.betec.ru/index.php?id=6&sid=52>.
- KPMS. (2007). Quality Management. Retrieved from kpms.ru.
- Mainfreight. (2014). *Ready, Fire, Aim*. New Zealand.
- Mehta, E. (2011, September 11). *Business process reengineering presentation* : *SlideShare Web site*. Retrieved from SlideShare Web site: <http://www.slideshare.net>
- Melcher, J. (2011). *Process Measurement in Business Process Management*.
- Miers, D. (2006). *The Keys to BPM Project Success*.
- Millen, D., & Botond, K. (n.d.). *Business Process Management for Dummies*.

- Monitoring, reviewing and enhancing an AML/CTF program, Continuous improvement: Commonwealth of Australia Corporation.* (2009). Retrieved from Commonwealth of Australia Web Site.
- Pictures For (Business Process Reengineering): PixGood Web site.* (2005). Retrieved from PixGood Web site: <http://www.pixgood.com>
- PiterSoft. (2015). Process Approach.
- Reengineering of Business Processes.* (n.d.). Retrieved from Grandars.ru.
- Ruth, S. A.-S. (2003). Business process modeling: Review and framework.
- SCM Solutions: Meadewillis EN .* (2006). Retrieved from Meadewillis EN Web site: <http://www.meadewillis.com>
- Seliverstova, P. (2014). Methodologies of Business Process Management (BPM). *Economics and management of technology.*
- Service/BPM Glossary: Aris Community .* (2009). Retrieved from Aris Community Web site: <http://www.ariscommunity.com/>
- Shirtladze, A. (2014). *Basic principles and tools for business process reengineering.* Retrieved from <http://www.cfin.ru/management/strategy/change/foundations.shtml>.
- Sinha, S. S. (2012, February 9). <https://sssinha.wordpress.com/2012/02/09/business-process-optimization-vs-business-process-re-engineering/>. Retrieved from TRADE & ECONOMY- PARADIGMS REVEALED.
- Vendrov, A. (2004). Methods and tools for business process modeling.
- Wim Bosman Group. (2007). *Wim Bosman in Russia.* Retrieved from Wim Bosman Group Web site: <http://www.wimbosman.ru>
- WimBosmanCorporateMovie* (2013). [Motion Picture].
- WimBosmanGroup. (2014). Annual report.

9 Appendices

9.1 Appendix 1 “as-is” map

3/2016



9.2 Appendix 2 “to-be” map

3/2005

