UNIVERSITY OF LJUBLJANA
FACULTY OF ECONOMICS

UNDERGRADUATE THESIS

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BUSINESS PROCESS OPTIMIZATION AT USED CAR REMARKETING DEPARTMENT

Ljubljana, December 2013 MARKO ŽOS

AUTHORSHIP STATEMENT

The undersigned Marko Žos, a student at the University of Ljubljana, Faculty of Economics, (hereafter: FELU), declare that I am the author of the bachelor thesis / master's thesis / doctoral dissertation entitled Business process optimization at used car remarketing department, written under supervision of Aljaž Stare Ph.D.

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INTRODUCTION

The purpose of the thesis is to gain deeper theoretical knowledge and understanding about business process, business process parts, business process goals and business process optimization methods and to identify the best approaches or steps to be taken when confronted with business process optimization projects in my future career.

The goal of my undergraduate thesis is to use this gained deeper knowledge to be able to analyse, assess and suggest improvements for the existing used car remarketing process at one of the largest premium brand vehicle importers operating in a large European market.

The current used car remarketing process is not supported by a quality information system which leads to a high number of mistakes, long waiting times between the process steps and lack of transparency evident in not knowing the number of cars at different process steps and not all required sub-processes are integrated into the main remarketing process (the later results in an insufficient management overview of used car remarketing business).

In the first part of the thesis I focus on the theoretical definitions of the business process and its elements. After having explained the process and process elements, I focus on possible business process goals.

Once the business process goals are laid out, the thesis presents different methods of business process optimization, their advantages and disadvantages as well as problems that some methods face.

After having discussed the different business process optimization methods, I select the method most suitable for the given project and outline the generic steps needed to be taken in order to obtain a clear picture of the current process, to critically evaluate the process and come to a new optimized business process.

In the practical part of the thesis I provide a short overview of the organization I work at and analyse the outlined organization and the current market situation it is facing. I move on to make a picture of a used car remarketing AS-IS process. Having the current situation at hand, I evaluate the process and show possible improvement areas in terms of process time and cost savings.

At the end of the thesis I focus on the new high level TO-BE used car remarketing process and present the major changes compared to the AS-IS process. Due to the limitation of the thesis, I cannot focus on single activities of the process but stay on process or sub-process detail level. Also I do not focus on the implementation of the new process but only on the presentation of the new TO-BE remarketing process which was just for information successfully implemented in the analysed organization in 2013.

1 BUSINESS PROCESS

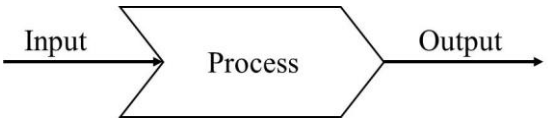
In order to understand the business process and its optimization I first present the main definitions outlining the business process. To better comprehend the reasons why the business process is employed in the organization I further discuss general business process goals and the methods of measuring the results.

1.1 Business process definition

Any organization or any part of organization can be viewed as a process where a process **is a transformation of inputs into outputs** (Anupindi, Chorpa, Deshmukh, Mieghem & Zemel, 1999, p. 4).

Business process is a set of logically connected executive and controlling procedures and activities the **goal of which is a planned product or service**. It can also be defined as a sequence of tasks and activities with the purpose to add value to process inputs when creating process outputs (Kovačič & Bosilj-Vukšić, 2005, p. 29).

Figure 1. Business process



Source: A. Kovačič, & V. Bosilj-Vukšić, *Management poslovnih procesov*, 2005, p. 29.

Figure 1 shows the process as a key part of transforming inputs into outputs. In order to know whether the output was satisfactory for the customer (internal or external) and to develop a process in time or align it more to customer needs, Harmon (2007, p. 3) also adds **feedback loop** to this figure, going from the output back to the input. This feedback loop shows continuous improvement of outputs, planning of inputs and process transformation efficiency.

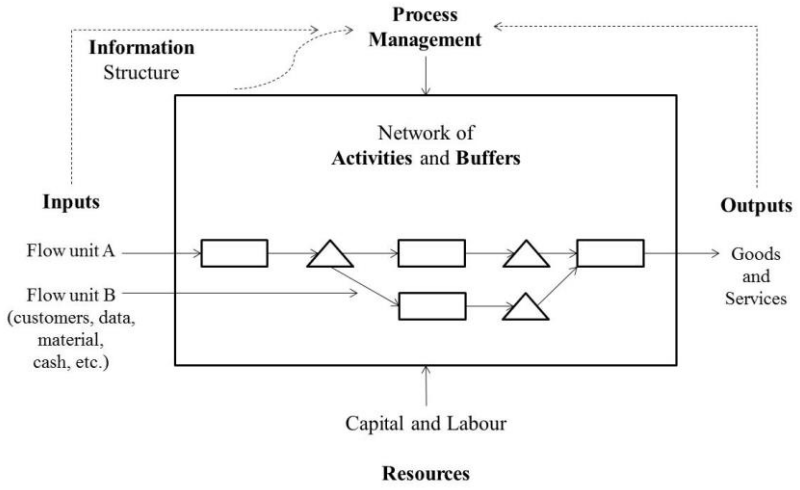
As the process also has to bring some results for the organization, Gomez-Mejia, Balkin & Cardy (2005, p. 221) add not only the feedback loop but also a **control function** to control the inputs, outputs and process transformation. The control function allows monitoring the quality of inputs and outputs and process costs (whether they are within the predefined parameters).

Process is not recognized only by the activities performed while it lasts but also by their **sequence** leading from input to output to achieve a desired result. The process activities have to be arranged throughout time and space with a defined **start and end date** and clearly recognized inputs and outputs (Kovačič & Bosilj-Vukšić, 2005, p. 29).

Anupindi et al. (1999, pp. 4-6) take a more in-depth insight into the process transformation to identify different process parts. According to them the process transformation is clearly defined by process structure which incorporates five elements:

- Inputs and outputs
- Flow units
- A network of activities and buffers
- Resources and
- Information structure

Figure 2. A Process as a Network of Activities



Source: R. Anupindi, S. Chopra, D. S. Deshmukh, J. A. van Mieghe, & E. Zemel, *Managing business process flows*, 1999, p. 6.

Figure 2 shows flow units entering the process transformation which is set as a network of activities and buffers and output results in the form of goods or services. The process transformation can be performed by using different resources and the entire process is supported by information structure.

With the purpose to be able to analyse and optimize the process, we first have to understand the transformation elements in detail.

1.1.1 Process inputs and outputs

The inputs refer to any **tangible or intangible** items that flow from the environment into the process whereas the **outputs** (products or services) flow from the process back into the environment. When aiming to identify all inputs and outputs we have to focus also on their **entry and exit points** since they define the process boundaries (Anupindi et al., 1999, pp. 4-5).

1.1.2 Process flow

Flow units are important for understanding **process performance analyses**, **capacities** and **investments**.

According to Anupindi et al. (1999, p. 5), the **flow unit** can, depending on the process, be:

- A unit of input (e.g. material entering the process)
- A unit of output (e.g. end product, can also be scrap)
- A unit of an intermediate product (e.g. unfinished product on the assembly line) or
- A set of inputs or outputs in a multiproduct process (in more complex products one process output can present an input of another process, e.g. tires can be sold as separate products or as parts of new vehicles)

If there are many flow units present in the process, they take up space and possibly require additional compounds. If they are expensive, they represent high costs and use a lot of capital. If they are difficult to move, they need special equipment like cranes (which also use space and capital). Also moving them from point A to B requires a lot of time and effort. Special flow units like chemicals also necessitate special treatment, knowledge and fulfilment of environmental standards that can vary depending on the country.

1.1.3 Network of activities and buffers

Anupindi et al. (1999, pp. 5-6) state there are various flows within the process that constitute the transformation. The transformation is achieved by flows throughout the **network of activities.** These activities are performed with various resources at the organization's disposal.

An **activity** is the simplest form of transformation that we need to consider. Simple activities build up blocks of sub-processes. Activities are ordered in a way that the output of one activity represents an input of the following activity. The network of activities shows **sequential relationships** between activities in a process (Anupindi et al., 1999, p. 6).

How detailed we present the activities depends on the level of process overview. For example, looking at a high level process overview of a manufacturer's supply chain an activity can be represented by a factory, but when discussing how a specific product is assembled in an assembly line, we have to provide the precise instructions needed to transform inputs into outputs.

In a production process there can also be storages or **buffers activities** between single activities. A buffer activity transforms the time dimension of a flow unit by delaying it. In business processes the storage is called inventory. It is not likely to find storage activities in service processes as the services are usually not produced on stock (Anupindi et al., 1999, p. 6).

1.1.4 Process Resources

Anupindi et al. (1999, p. 7) define resources as **tangible assets** divided into two main categories which have to be understood in a broader meaning:

- **Capital** seen in a broader perspective (as money, infrastructure, means of labour, etc.) and
- **Labour** seen in a broader perspective (as workforce, their knowledge and expertise)

While the **inputs are consumed** in a process, **resources are utilized**. The same resource can be used again and again in a process. This does not hold true for an input, where a new one is needed every time. The process defines methods in which resources are used. The same output can also be obtained with a different combination of resources or with process automatization (Anupindi et al., 1999, p. 5).

1.1.5 Process Information structure

All these four elements are surrounded by the process information structure which shows which information is needed and/or available in order to manage activities and/or make managerial decisions. This process related information indicates the performance of the process. In order to evaluate the information coming from these four process elements, process standards have to be set as they determine any possible deviations in a process (Anupindi et al., 1999, p. 5).

1.2 Business process goals

Considering the process, the process result is clearly an output. The recipient of an output can be a **customer** or an **organization**. Usually it is both. The customer receives **goods or services** and the organization receives **profit** as a difference between the **added value** to a process and process cost.

1.2.1 Products or services

Goods are a product of a process called manufacturing or production operations whereas the services are a result of processes called service operations. The main difference between the two is that the **services cannot be produced on stock** and handed over to a customer later. Therefore there are, as already mentioned, **no buffer activities** in a process. This leads to a conclusion that services are in a close relation with a customer's physical presence in a process**.**

Process can also result in **non-desired** outputs called **by-products**, e.g. scrap or pollution. Some scrap cannot be renewed in a process and therefore brings about additional costs. Depending on regulations, pollution can also bring high costs and even a negative reputation and revolt of the local population which can eventually lead to an end of the process. Clearly one of the process goals should be minimizing the non-desired outputs (Anupindi et al., 1999, p. 8).

Customers buy products or services to satisfy their needs. Anupindi et al. (1999, pp. 8-9) have listed the following four main **product or service attributes** that customers are looking for:

- Product cost
- Product delivery-response time
- Product variety and
- Product quality split to:
    - Product features

- Performance and
- Reliability

When defining a product, also understood as a desired output of a process, we can present it as a point in a four dimensional matrix of cost, time, variety and quality. These four product elements are also important for understanding the process optimization. This is presented further on in the thesis.

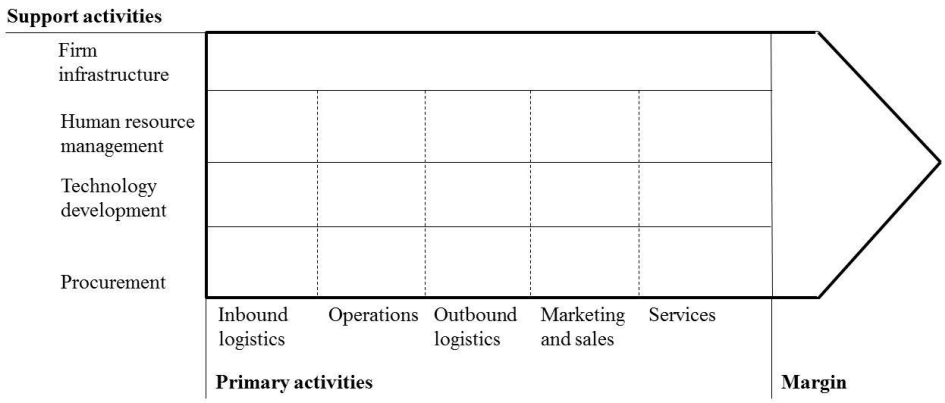
1.2.2 Added value

Anupindi et al. (1999, pp. 60-61) divide the process activities into 2 groups based on the value they add to the process:

- **Value adding** activities those that add value to the output in the eyes of the customers.
- **Non value-adding** activities, on the other hand, do not bring any added value to the output. These can be inspections, work scheduling, workers' mileage, machines setting time, testing, transportation of product parts from different locations, etc.

To comprehend the total added value of the process, one should first have a look at the added value of all of the activities in a process. This is known as value chain. Porter and Millar (1985, p. 31) define it as a collection of sequential activities performed in order to design, develop, produce, offer, sell, deliver and maintain product or service.

Figure 3. Value chain



Source: E. M. Porter, & V. E. Millar, *How information gives you competitive advantage*, 1985, p. 6.

Figure 3 shows value chain activities divided into **primary** and **supportive activities**. The goal of the primary activities is a **satisfied customer** or user of the product or service. These activities directly add value to the product or service. Supportive activities **provide** optimal development **and control** of primary activities. Supportive activities can only indirectly add value to the process (Porter & Millar, 1985, p. 31).

Primary and supportive activities result in a process profit measured as a difference between the process added value and process costs. Defining the profit in this way also allows

comparison of various organizations' process efficiencies (Kovačič & Bosilj-Vukšić, 2005, p. 31).

1.3 Business process measurement

As shown before, the process produces and delivers products or services by transforming inputs into outputs by means of capital and labour in the broader meaning. When evaluating the process's performance, it is essential to focus on the ability of the process to result in a desired output with the use of the given inputs (Anupindi et al., 1999, p. 10).

Kovačič and Bosilj-Vukšić (2005, pp. 29-30) define process efficiency based on resources employed in the transformation of inputs into outputs. In most of the times this is measured in time or/and cost that arise when transforming inputs into outputs. In similar way the process efficiency can be measured by frequency or consistency of an output compared to the desired output, or with added value that the process results in.

Anupindi et al. (1999, p. 10) suggest that when measuring the processes, one should start by looking into processes that have the most important role in achieving product attributes. Doing this, we can divide the **process attributes** on similar basis as product attributes:

- Process cost
- Process flow time
- Process flexibility and
- Process quality

These process and product attributes are often interrelated. For example, higher product quality is often related to higher product and process costs and flow times.

Only by gathering the results we cannot decide whether the process is efficient or not. In order to determine the process's efficiency, Anupindi et al. (1999, p. 12) suggest that we first:

- Evaluate and measure the organization's current performance and
- Evaluate future goals as expressed by the firm's strategy

To do this a process has to be measured in a quantitative way. The process performance has to take into account both financial and operational sides of the process.

By capturing facts in an objective, concrete and quantitative way, the measurement provides a scientific basis for decision making. Anupindi et al. (1999, p. 12) states that this allows to estimate the functional **relationships between** controllable **process attributes and desired product attributes** and allows us to set the process standards. Any deviation between set process standards and measured process results calls for process optimization.

Anupindi et al. (1999, pp. 13-15) define and explain four types of measurements:

- External
- Internal
- Financial and
- Operational

External measurements represent a feedback from parties not directly involved in the process - product buyers or users. They measure an organization's ability to attract and retain customers. This can be on different product attributes levels. External measurements are strongly related to the process's **economic environment** that includes three elements:

- Output market (product demand vs. product price and presence of the competition)
- Input market (supply of inputs vs. supply costs) and
- Resource market (availability vs. cost of resources)

Internal measurements measure those process attributes which can be influenced by the organization. By manipulating process attributes, the organization can also influence product attributes and thus customer satisfaction. The easiest attributes to be transferred into quantities that enable measurement are process cost and time. These two process attributes also directly influence two product attributes: product cost and delivery-response time.

If we aim at improving the product attributes, external measures have to be translated into internal measures. The internal measures should meet two conditions in order to be effective. They have to be:

- Linked to the external measures that the customer deems important and
- Directly controllable by the organization.

The process performance can in the end be summarized and measured by the organization's **financial performance**. Usually there are three main financial measurements in the organization:

- Absolute performance (e.g. revenues, costs, profit, etc.)
- Performance relative to asset utilization (e.g. average days to sell and average inventory as presented in equation 1 and 2, etc.) and
- "Survival" strength (e.g. cash flow etc.).

Pučko (2005, pp. 124-126) defines average days to sell and average inventory as:

$$\textit{a}\text{verage days to sell} = \frac{\text{365 or 366 days}}{\text{average inventory}} \qquad (1)$$

$$\text{average inventory} = \frac{(\text{Beginning inventory} + \text{Ending inventory})}{2} \qquad (2)$$

The problem with the financial results is that they are short summaries, lack textual explanations and more result then action oriented.

Operational measurements, on the other hand, are detailed, frequent, action oriented, controlled and have impact on the financial measurements. Ideally, the operational measurements should be the key indicator of the financial performance.

Anupindi et al. (1999, pp. 37-42) connect the measurements' relationships in stating that as the external measurements mirror the internal measurements also the financial measurements should mirror the operational measurements. The operational measurement can be divided into four categories:

- Flow rate (number of units passing a certain point in process)
- Flow time (time needed for a unit to be processed or sub-processed)
- Inventory (number of units on stock at specific time or place)
- Relating flow rate, flow time and inventory

After the process is measured, it can be compared with the process goal. If the process measurements are negatively deviating from the process goals, the organization should start considering the employment of process optimization in order to achieve the set goals.

2 BUSINESS PROCESS OPTIMIZATION

General goals of the business process optimization and business process optimization methods used in the past and presently are addressed in this chapter. In addition to that, this chapter also focuses on the business process optimization method used in the practical part of the thesis (when carrying out a real business process optimization project).

2.1 Business process optimization goals

Kovačič and Bosilj-Vukšić (2005, p. 41) explain that better overall process performance or process efficiency can be achieved by:

- Process informatization
- Eliminating unnecessary activities
- Automatization of tasks
- Better access to information and
- Improved communication between the involved parties

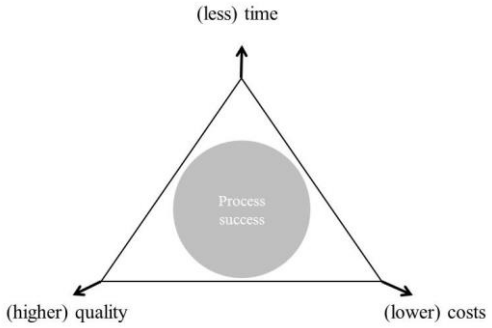
In addition to the process efficiency, Kovačič and Bosilj-Vukšić (2005, p. 41) find process success to be another vital factor. This means that the organization does not only perform activities efficiently but also performs the right activities. Hence, it is also possible to perform wrong activities efficiently. The process's success can be improved by:

- Making bigger changes

- Redefining processes or by
- Redefining products or services

Figure 4 shows the dependence among three main goals of process optimization: time, quality and costs. It is not possible to achieve all of them at once. Pursuing only one goal can set back the other goals. Which goal is more important to achieve highly depends on the organization's strategy (Kovačič & Bosilj-Vukšić, 2005, p. 41).

Figure 4. Basic process optimization goals



Source: A. Kovačič, & V. Bosilj-Vukšić, *Management poslovnih procesov*, 2005, p. 42.

A strategy can be to provide a product or service for the lowest possible price. On the other side, a strategy can be to provide a product or service of the highest quality in respective time for a higher price. The same output can also be achieved in less time with a better organization of work or automatization. The later will result in higher capital costs but also reduce labour costs and increase quality.

Rusjan (2009, p. 9) states that, when looking at the process goals, efficiency should not be the main focus. According to him, it is more important for the organization to achieve a competitive advantage. The efficiency of a process should be dependent on the organization's strategic goals. It is more imperative for the organization to achieve its strategic goals than to achieve the efficiency of the process.

Harmon (2007, p. 42) suggests that the only way to achieve the competitive advantage is by optimizing the value chain. The focus should be on eliminating the non-value adding activities in a process. The competitive advantage can result in charging more for a product because it is more valuable in the customers' eyes or it can result in a lower market price which is possible because of a more efficient process. Both should lead to higher profits compared to the competitors. The first is a result of a good **strategic positioning** and the second of **operational effectiveness**.

Aiming only at the operational effectiveness, focusing on best practises and trying to be better than the competition in all areas, eventually leads to exhausting the organization and lower margins. The organization should have a defined strategy of how to focus on a specific set of customers by offering a specific product or service. This should be a prerequisite for process

optimization (Harmon, 2007, pp. 43-44). Porter and Millar (1985, p. 9) describe this as **enhancing product or service differentiation**.

The process optimization goal should therefore be a set of measures taken in order to achieve or maintain the competitive advantage by focusing on strategic positioning of the organization.

2.2 Business process optimization methods

Kovačič and Bosilj-Vukšić (2005, p. 48) state there can be different ways of business process optimization based on the scale and content. Looking at different levels of optimization the process of optimization can be divided into two categories:

- Improvements and
- Reengineering

Improvements typically take place constantly during the process. All the optimization efforts are concentrated to slightly optimize the ongoing single activities. The results of improvements are usually simplified and automated activities and/or cost reduction (Kovačič & Bosilj-Vukšić, 2005, p. 48).

Costin (1999, p. 373) states that the improvements can only be possible if the processes in organization are stabilized. **Continues process improvements** occur when the processes are stabilized and constantly assessed and when the process improvement becomes institutionalised.

Reengineering usually begins as a response of management on key business problems or changes. Its goal can be achieving a competitive advantage before the competition, catching up with it or changing business rules and setting up new standards (Kovačič & Bosilj-Vukšić, 2005, p. 48).

In both cases the process optimization is supported by the introduction of information technology into the process with the goal to achieve the competitive advantage.

There are many expressions in literature referring to the business process optimization. This is a result of years of method development and influences of many business schools and method users. Main expressions found when reading through the literature are as follows:

- Total quality management (TQM)
- Business process redesign (BPR)
- Business process reengineering (BPR)
- Business process management (BPM)
- Business process change and

- Business process restructuring (BPR)

As shown, different methods can have the same abbreviation, making it a little confusing when reading through the literature. There is usually also no clear cut between the different methods.

2.2.1 Total quality management (TQM)

TQM method started developing in late 50's and was widely used in 80's and 90's as a response to customers' demand for better quality products. It was developed mainly in the production process. The foundations for TQM method lie in a method called total quality control (TQC).

At first the TQC method integrated only different quality effort areas (maintenance, development and improvement) among different groups inside the organization in order to support the production and service to meet the customer needs in the best economical way. Later the TQC method was extended to control the process from product design till the product was placed into customer hands (Costin, 1999, pp. 8-15).

The finding that the workers cannot improve the working processes by themselves led to a belief that only management can enforce improvements. At the same time the management of the organization became aware of the potential that higher quality offers. Higher quality in their perception resulted in lower costs and higher customer satisfaction which leads to higher potential prices. This both results in higher profitability. Management started including quality into their strategic planning and in many cases quality was perceived as a competitive advantage. The TQM also led to a shift in thinking that not only controlling but also learning and involving are important (Costin, 1999, pp. 15-25).

The TQM method concentrates mainly on the quality of the product and the process. But in many cases the processes are inadequate and have to be changed completely because mere optimization is not enough.

2.2.2 Business process redesign

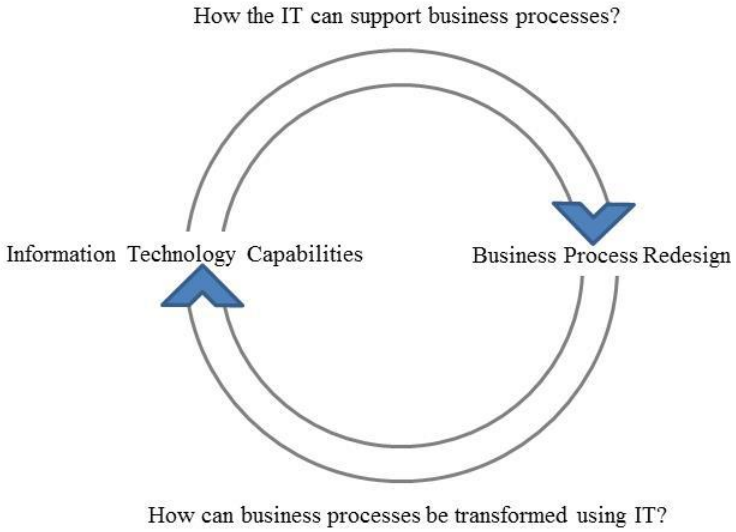
The business process redesign started in late 80's and was used in 90's with the focus to reinvent, reposition, restructure and de-departmentalize critical business processes. This should be done with a focus on a customer need, not on the business. The focuses of redesign are physical, business, technical and information processes as well as the people in the organization (Costin, 1999, p. 279).

In majority IT technology was not yet exploited to support the business processes. The organizations that used it to support business processes redesign focused on the tools supporting AS-IS business process modelling and design (Costin, 1999, pp. 351-352).

Harman (2007, p. 13) states the IT tools used at the beginning of 90's were limited to simple modelling of department tasks. Due to technology restrictions they did not yet offer the possibility of complex cross organizational process modelling. During the 90's the first more advanced modelling and design tools were developed called **enterprise resource planning** (ERP) systems.

Harrington, Esseling, & van Nimwegen (1997, p. 9) see the role of IT in process redesign method as process enabler rather than process driver.

Figure 5. The recursive relationship between IT capabilities and business process redesign



Source: H. Costin, *Strategies for quality improvement*, 1999, p. 353.

Figure 5 indicates that when performing business process redesign we should consider how IT can support business processes and how business processes should be designed to fit the available information technology.

Considering the rapidly changing business environment in the 90's compared to the previous periods, the focus of the process redesign was not in the efficiency of individual tasks and workplace rationalization but in maximizing the outcome of all dependent activities within and across the entire organization (Costin, 1999, pp. 352-353).

Costin (1999, pp. 279-280) states that the business process redesign extremely improves the AS-IS process by linking different business processes together in order to:

- Decrease product and information movement
- Reduce waiting time and material and/or product storage time
- Eliminate unnecessary activities
- Decrease process time
- Decrease complexity of a process
- Decrease process costs

- Reduce cycle times by overlapping different activities
- Provide real time feedback on business process and sub-processes and
- Enable fast detection of business process problems and solution response

The process redesign reduces costs, times and errors between 30-60% and if this reduction in costs, times and errors bring result in the organization's competitive advantage, the process redesign is the right method to be used for process optimization (Harrington et al., 1997, p. 8).

As the focuses of the process redesign are only all dependent activities, this does not necessary lead to the optimization of the overall process.

2.2.3 Business process reengineering (BPR)

Business process reengineering method was developed from a total quality management (TQM) model. First results of BPR were seen in organizations that had previously encountered and already had a TQM culture. In many organizations the TQM was not fully successful because it did not deliver big gains quickly. But the set culture in organizations helped a more radical method like Business Process Redesign succeed. At the same time the Business process reengineering provided a broader process perspective to facilitate the reengineering of business processes and achieve radical changes in the strategic direction (Costin, 1999, p. 377).

Based on Harmon (2007, pp. 9-10), the previous models were overly focused on the sub-processes and forgot on the added value of the entire process. Optimizing sub-processes does not necessary lead to overall process optimization. This is also why business process reengineering was widely accepted by big organizations.

Kovačič and Bosilj-Vukšić (2005, pp. 35-36) define **business process reengineering** as basic verification of business processes (processes, procedures and activities) and their concrete adaptation or change undergone in order to achieve a positive result in areas like:

- Lowering costs
- Quality improvement of product or service
- Shortening delivery time, etc.

With a developing IT technology in the 90's organizations started using IT systems to automate their processes. This also resulted in a need for a substantial organizational change. The focus of the business process reengineering is to make occasional major improvements which also result in organizational changes that in case of cross functional process lead to abandoning traditional functional organizational structures and setting an organizational structure set around the core processes in order to improve the added value of the core processes, not focusing on the added value of the functional units. The focus of the BPR is the outcome not the tasks. The defined outcome will also define the scope of the BPR (Costin, 1999, pp. 377-384).

Harmon (2007, p. 11) states that a more efficient use of IT and process automation are the two major emphasis of the BPR method.

The TQM and Business process redesign were more focused on defining and operating business processes in order to produce a product or service in a defined organization. The Business process reengineering is, on the other hand, in this way more radical and offers strategic direction setting and planning as well as enables reinventing the business and industry.

The use of IT solutions to support new reengineered processes is not generally a prerequisite of Business process reengineering but it can support the processes in terms of time, cost and safety, especially when the processes are connected to suppliers and customers. The real aim of Business process reengineering is the organizational change (Costin, 1999, pp. 383-384).

Kovačič and Bosilj-Vukšić (2005, p. 49) also perceive process reengineering as a radical change in the organizational structure. Therefore the organizational management level has to meet the following two conditions before a new organization can be planned:

- Stop using obsolete business methods and rules and
- Abandon inappropriate organizational structures and models

Gomez-Melia and Balkin (2012, p. 480) see process reengineering in a production process as a dramatic approach to quality that includes changing the complete production process rather than making small changes. They view the organization as a series of activities that produce the products and services necessary to achieve the organization's goal. The objective of the reengineering is to change the entire process at once. The focus is the process, not single activities.

The result of business process reengineering can be a reduction in cost and time between 60-90% and error rates between 40-70%. The BPR can be used in 5-20% of process optimization projects within the organization. If applied more frequently, this could be a result of serious, not yet discovered organizational problems. As the BPR requires dramatic organizational changes there should only be one process reengineering project performed at once (Harrington et al., 1997, pp. 9-10).

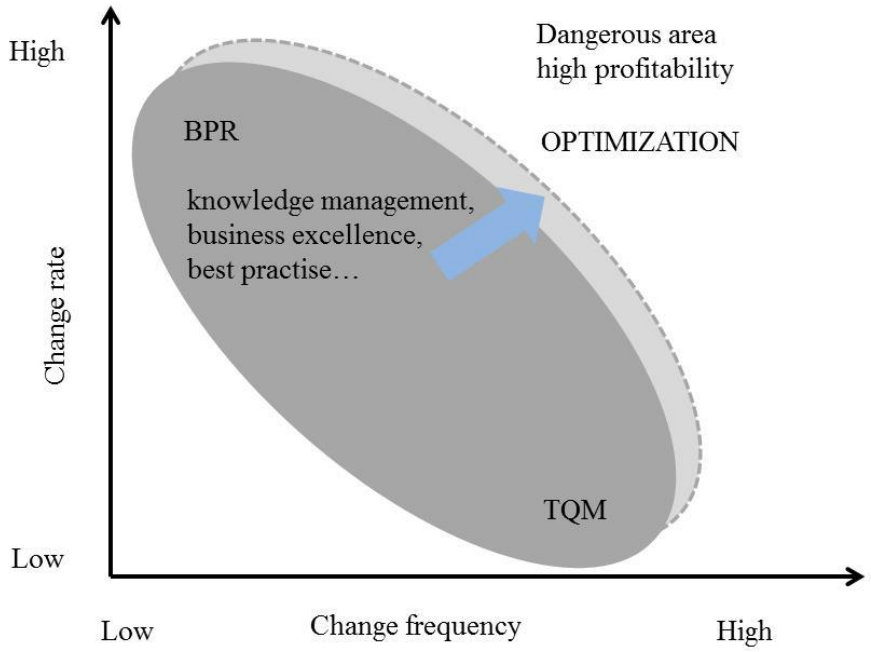
As the competitive advantage is a dynamic goal and does not stand still, the reengineered process should be continuously improved. The BPR method does not offer this approach (Costin, 1998, p. 386).

2.2.4 Business process management (BPM)

The most modern and currently used process optimization approach is the business process management. The **Business Process Management** is a business approach to implementing changes in business processes. BPM is a set of different tools and methods that lead to an

optimum result under given circumstances. The main methods are the business process reengineering (BPR) and TQM and it also incorporates and connects a set of past and new methods and tools (Kovačič & Bosilj-Vukšić, 2005, p. 39).

Figure 6. Business process management leverages

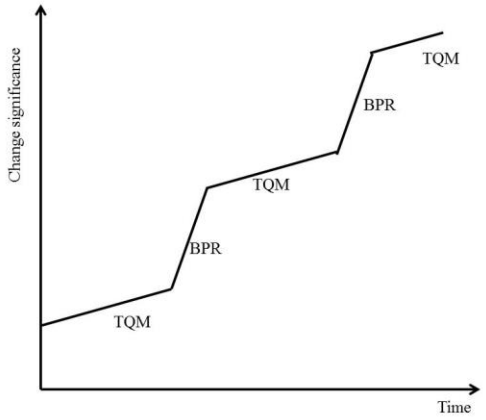


Source: A. Kovačič, J. Jaklič, M. I. Štemberger, & A. Groznik, *Prenova in informatizacija poslovanja, 2004*, p. 68.

Figure 6 shows how the BPM uses the different methods and tools as leverages in order to optimize the process. It also indicates that in current unstable and quickly developing economic environment standing still is not an option for the organization as it would lead to a setback. BPM is a set of tools and methods that enable continuous improvement in the organization.

The business process reengineering presents the main method in optimizing the processes but as already stated this method should not be used frequently. It is only advisable to use it when drastic changes are needed. But as the organization has to constantly improve the TQM method is used for constant improvement (Kovačič, Jaklič, Štemberger & Groznik, 2004, pp. 67-69). This relationship between TQM and BPR is shown in Figure 7.

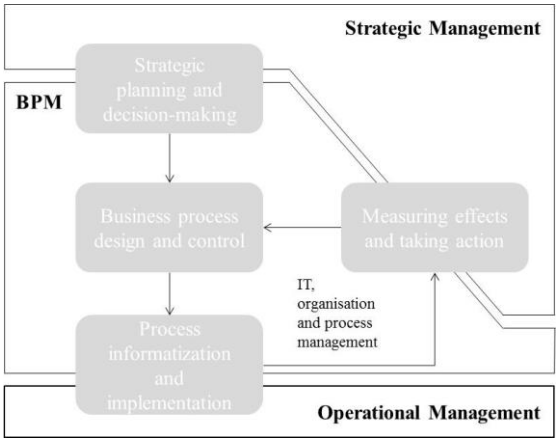
Figure 7. Relationship between the TQM and BPR



Source: A. Kovačič, J. Jaklič, M. I. Štemberger, & A. Groznik, *Prenova in informatizacija poslovanja*, 2004, p. 69.

Business process management is a modern way of managing changes in business and business processes within the organization. As shown in Figure 8, the business process management together with harmonized measures in organizational structure, processes and process informatization eliminates the disconnectedness between **strategic management** and **operational management** which otherwise causes problems in many organizations and provides basics for process monitoring and taking further actions (Kovačič & Bosilj-Vukšić, 2005, p. 15).

Figure 8. Role and position of BPM in organization



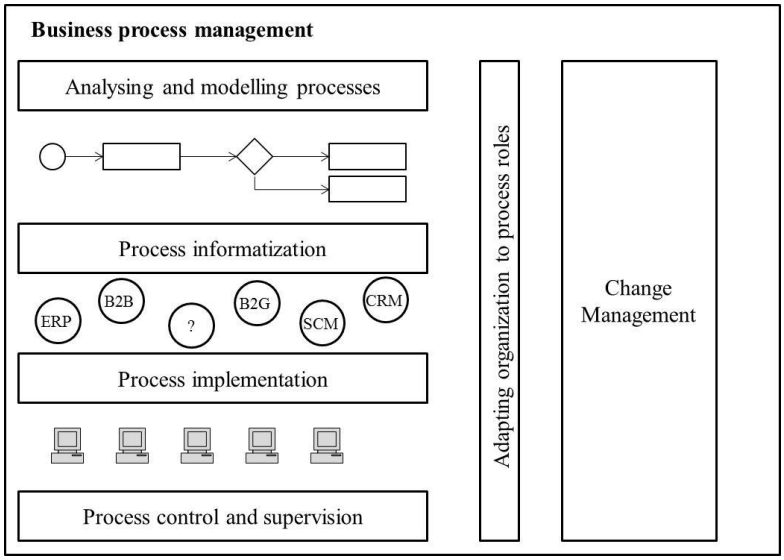
Source: A. Kovačič, & V. Bosilj-Vukšić, *Management poslovnih procesov*, 2005, p. 15.

Figure 9 shows how the business process management is oriented into connecting the supplier and customer processes and their information systems, which can be achieved by taking the following steps:

- Dynamically adjust the organization to the business rules with analysing and modelling processes
- Informationalize the process or provide the right informatization solution to support implementing activities

- Implement the process
- Monitor results and
- Control the process

Figure 9. Business process management



Source: A. Kovačič, & V. Bosilj-Vukšić, *Management poslovnih procesov*, 2005, p. 39.

Business process management is oriented into developing a platform or a model to integrate the business strategy, business model and business processes into an informational system or tool. This system or tool then presents a basic infrastructure of the organization (Kovačič & Bosilj-Vukšić, 2005, p. 40).

Harmon (2007, p. 19) points out that at the beginning of the new millennium new business process management systems arose, combining the workflow systems, software integration application systems and internet in order to connect the customer, organization and suppliers. This allows coordinating day-to-day activities of both the employee and the software application. Managers can now steer their businesses through a dashboard in (almost) real time.

2.2.5 Business process change

What Harmon (2007) refers to as business process change is continues development of business process methods, tools and system applications in order to facilitate the daily business.

This definition is similar to the Business process management definitions. Also in his book he refers to the same concepts as presented by other authors as business process management. This drives me to the conclusion that the business process change is merely a different naming for the business process management method.

2.2.6 Business process restructuring

Zilka (2010, p. 14) describes **business restructuring** as a method employed for the purpose of process optimization and distinguishes three major areas in the process optimization:

- Organizational efficiency (setting the organization structure in an optimal way)
- Business process improvement (the focus is the process optimization and can be achieved by utilizing the different already described methods) and
- Business process outsourcing (some processes can also be outsourced to contractors)

Based on the presented definition the business restructuring is a method similar to the business process reengineering as it also includes the complete change of the process including the activities and the organization.

2.3 Business process optimization success factors

Dutta and Manzoni (1999, pp. 2-3) list three possible reasons for process optimization failure:

- Optimization project finishes before being implemented. Because the time spent for process optimization and planning was long and exhausting, this can results in employees' frustration and in low chances of success of the subsequent projects.
- Improvement is not sustainable in the long run as it was achieved with more than 100% of employees' effort. This can also be a case if the result of optimization was lowering the number of employees without lowering the work load.
- The optimization was noticeable in some areas like customer relationship management (CRM), but stopped at a certain point. The optimization is not a complete failure but it is also not a success as it does not provide a desired improvement pace

Zilka (2010, p. 14) suggests that the key elements of a successful process optimization are as follows:

- Quality data on the current process
- Information about internal and external process benchmarks
- Clear management involvement, responsibility and accountability and
- Clear communication to the employees

Kovačič and Bosilj-Vukšić (2005, pp. 47-48) state that the **Business process reengineering was not successful in 70% of the cases** because it was overly focused on activities and did not take into consideration the other two pillars of the successful process optimization:

- Ownership, availability and allocation of resources and
- Organization of basic sub-processes like financing, HR and informational support

Kovačič et al. (2004, p. 62) enumerate the following main success factors for business process reengineering:

- **Motivation of the management level** to support the process optimization in order to achieve the competitive advantage
- **Assigned project manager** should be a person inside the organization's management and should at all times show confidence in the project and share this confidence with other employees
- **Confidence of the middle management** as they are less reluctant to follow the management because of the fear that the organizational change will take away the benefits they gained over the years
- **Clear vision** of the new strategic goals should be communicated in a clear and acceptable way to all of the employees
- **Focus** of the optimization project should be put **on the changes** that contribute the most to the organisational goals
- **Roles and responsibilities should be clearly defined** before and after the start of the project
- **Results** of the process optimization should be **clearly defined and measurable**
- **IT support** of methods and tool used during the process optimization and after, supporting the running process
- **Field experts** should provide not only control but also **guidance** and be deeply involved in the process and
- Project owner, persons responsible for a project, should **be aware of the risks and** take **responsibilities** if the project fails

2.4 The business process reengineering guide

As the target of the project presented in the practical part of the thesis is business process reengineering, I provide in this chapter a deeper insight into how to perform business process reengineering and which steps to take.

When doing the process optimization, the organization has to focus on the core processes (Dutta & Manzoni, 1999, p. 62). The new processes should be designed in a way that they are not utilizable only today but uphold in the future as well (Costin, 1999, p. 384).

When analysing and optimizing the business process, Kovačič and Bosilj-Vukšić (2005, p. 30) propose taking into account the following main process characteristic:

- **Process goal** is a predefined added value of an output and as such the aim of the organization
- **Process owner** is a person responsible for the process
- **Process beginning and process end** should be strictly defined in order to allocate clear responsibilities

- **Inputs and outputs** should be clearly laid out so that we know what the process transformation has to do to the input in order to get the desired output
- **Sequence of activities in a process** defines the sequence of each activity in order to come to the defined output. Some activities cannot be started if others were not yet taken or finished.
- **Handling in case of inconsistencies** aligns process deviations back to the defined process. As per each process there could be deviations in time and it is essential to react to these deviations quickly and efficiently.
- **Process measurements and standards that allow identifying process efficiency** are key performance indicators (KPIs) and they indicate whether the process needs to be corrected (e.g. time needed to finish an activity, costs generated by an activity, etc.). Some KPIs are difficult or expensive or in some cases even impossible to measure (e.g. added value of a single employee in a process). The goal is to measure the most important ones and to know which activities influence the result in order to know which activities are deviating.
- **Internal or external customers and suppliers**. Internal customers and suppliers are those inside the organization and the external ones are those outside the organization. It is important to know expectations of both, internal and external customers and suppliers in order to achieve the desired added value of the process.
- **Permanent education** is necessary in order to constantly look for new ways of doing things and achieve or preserve the organization's competiveness edge

According to Power (Harvard business review, 2011), the process owners are highly placed, respected and connected to make things happen. Their responsibilities include:

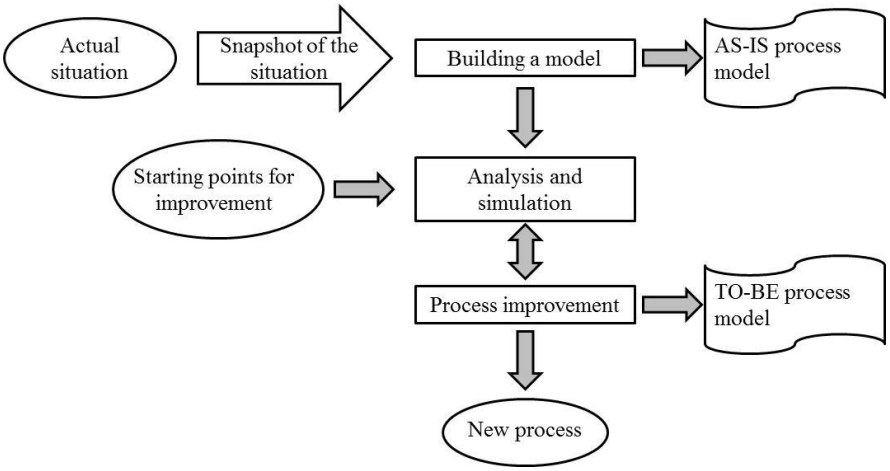
- **Acting as the "voice of the customer**" by understanding customers' total experience with the organization, from the moment the customer first gets to know the organization till they decide to end the relationship
- **Monitoring the process** using main KPIs and reporting to the top management
- **Making sure the organization's key processes are delivering the competitive advantage**, and if not, making sure that the right process adaptation will soon be in place

Costin (1998, p. 385) states that there are many approaches suggested by many different authors but in general they all come to one basic concept for doing business process reengineering:

- **Discover** the problem and goals
- **Hunt and gather** the information and analyse the process (AS-IS process)
- **Innovate and build** a new process (TO-BE process)
- **Reorganize, retrain and retool** the organization (process implementation)

Figure 10 shows a conceptual generic view on the steps needed in order to come to a new optimized process.

Figure 10. Course of business process reengineering steps

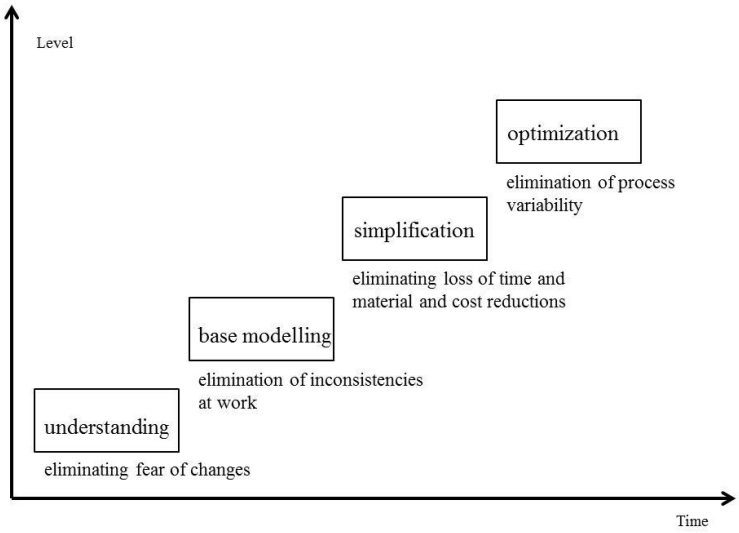


Source: A. Kovačič, J. Jaklič, M. I. Štemberg, & A. Groznik, *Prenova in informatizacija poslovanja*, 2004, p. 73.

In a similar way, Kovačič and Bosilj-Vukšić (2005, pp. 49-52) define four generic steps that have to be taken when executing process reengineering. How much in detail some steps are taken is defined by the scale of a process and knowledge of the analyst/s:

- **Understanding** the process and eliminating fear in the organization
- **Base** process **modelling** and eliminating inconsistencies at work
- **Simplification** of the processes resulting in the reduction of time and costs and
- **Optimization** of processes and elimination of process variability

Figure 11. Steps and key results of process optimization



Source: A. Kovačič, & V. Bosilj-Vukšić, *Management poslovnih procesov*, 2005, p. 50.

It is evident from Figure 11 that by understanding the process we eliminate the fear of changes within the organization. By base modelling we already find some inconsistencies or double work which could, if reduced, lead to quick gains. Simplifying the process can lead to

a reduction of the required time and better handling of materials. Finally, by optimizing the process, we reduce the process variability.

Looking at the organization as a process, we should perform the analyses steps of transformation elements in the same sequence as defined at the beginning of the thesis. To evaluate and improve the process's performance, we have to take a look inside the process and examine the input-output transformation in greater detail. The result should be a clear view of all the five elements and the relations among them (Anupindi et al., 1999, pp. 37-42).

In addition, Kovačič and Bosilj-Vukšić, (2005, p. 30) do not only focus on the process transformation elements in analysing and later optimizing the process but also on the process in a more holistic manner. In order to identify an efficient and successful process performance we have to look at every activity in the organization and outside of it that contributes to the added value of a process output, directly or indirectly, as a process.

Anupindi et al. (1999, p. 16) state that to be able to optimize the processes we have to first plan them. Process planning involves choosing or designing process architecture. This usually begins by defining the process outputs and the product attributes that the organization provides to its customers. This may also be influenced by the organizational's strategy of positioning itself on the market. After defining the product and product attributes the needed inputs can be identified.

After having defined inputs and outputs, then based on Anupindi et al. (1999, p. 16), it is time to define the process transformation attributes, the process and the process attributes taking into consideration:

- Plant location and distribution
- Product and process design
- Resource choice and investment (capital and labour) and
- Scale of operation

To sum up the process planning tasks, the **process planning** involves strategic positioning of both products and processes and defines a long-term commitment of resources (Anupindi et al., 1999, p. 16).

After determining the product attributes and designing the processes, the process owner should develop a **process control** and determine the target values for measuring the performance. The process control specifies how the processes should be operated and monitored over time. The goal of the process control is to ensure that the actual process does not deviate from the set process standards over time. If the actual process deviates, measures need to be taken to ensure the process standards (Anupindi et al., 1999, p. 16).

Anupindi et al. (1999, p. 16) suggest the following control elements that include monitoring and correcting:

- Product cost
- Delivery performance
- Customer waiting time
- Inventory levels and
- Quality defects

All these steps are deeply focused on the AS-IS and on the TO-BE process analyses. But they all lack the need to integrate the IT tools supporting the process and implement the new TO-BE process in the organization.

Costin (1998, pp. 409-411), on the other hand, also focuses on the system and the implementation of the TO-BE processes. He defines five high level reengineering activities, identifies two of them as crucial redesign activities, and describes all of them by stating that they:

- Identify the processes to be reengineered
- Identify the organization's change levers (e.g. possible IT solutions implementation)
- Develop process vision
- Understand and improve the existing processes
    - Describe the current process flow (AS-IS process)
    - Measure the process considering new process objectives
    - Assess the process in terms of new process attributes
    - Identify the process problems and improvement areas
    - Assess current IT used in the organization and the organization itself
- Design and implement the new process
    - Design process alternatives (many possible TO-BE processes)
    - Assess feasibility, costs, benefits and risks of the newly designed alternatives
    - Decide on the alternative to be used (TO-BE process)
    - Develop a system prototype to support the new process and test it
    - Develop a process and system migration strategy and
    - Implement the new organizational structure, processes and system

In a similar way Harrington et al. (1997, p. xvii) list six administrative phases on how to approach and conduct business process improvement. By doing the following:

- Organizing for process optimization
- Defining the documentation gathering and analysing methods and tools
- Performing analyses and defining areas of improvement
- Designing a new administrative business process and tools

- Implementing the future business process and tools
- Managing the organization in order to achieve future improvements

Kovačič and Bosilj-Vukšić (2005, p. 42) believe that the targets of the **Business process reengineering** project should be to:

- **Simplify business process** by eliminating unnecessary activities (e.g. eliminating any possibly unneeded approval processes, movements on the assembly lines, etc.)
- **Cut process time** (e.g. through allaying the activities in a way that the waiting time is shortened)**, raise responsibility (**to urge the employees to think about the activities performed and to improve them) **and consequently lower costs** (e.g. by not overproducing)
- **Increase added value** of all activates and at the same time increase product or service quality (e.g. by automating activities and sharing the information)
- **Lower process cost to the level of quality and time** (e.g. by eliminating waiting time between the activities which results in lower stock costs, better control over the inventory, well designed and controlled processes result - less scrap, etc.)
- **Increase quality of product or service** by increasing the reliability and consistency of process implementation (e.g. by automating the process)
- **Integrate supplier activities** into the organization's own process (e.g. by automating the material ordering processes, involving suppliers in the organization's material control, etc.)
- **Outsource** non-key activities (e.g. transport services, maintenance, cleaning, etc.).

2.5 Business process modelling

All the discussed business optimization methods highlight the importance of business process modelling as a graphical representation of activities. In this section I present the definition of business process modelling and provide the techniques that I later use when performing the business process optimization in an organization.

Modelling is designing, creating and using a model. A **model** is a picture of the current situation that reflects a view of the reality. A model can be used to understand the current situation, transfer the knowledge or simulate the changes without implementing them yet in the real business process. Each model is built with a specific purpose and shows the situation from a specific view (e.g. the model can be developed for only understanding the current situation or to be used later for the process optimization). The parts that are not defined by the purpose are not shown in the model (e.g. if we only look at the customer handover process we do not examine the production process even though there can be no handover without the final product) (Kovačič & Bosilj-Vukšić, 2005, p. 177).

Based on Anupindi et al. (1999, p. 7) a model is a tool for performing two functions:

- Evaluating processes and
- Studying the way in which processes can be designed, restricted and managed to improve performance

Business process modelling represents the activities in the organization. It captures the activities in a documented form allowing later process analyses and optimization (Sherry, 2011, p. 16).

Describing business processes can be very complex and untransparent in case of complex processes with many sub-processes and activities. To present the process as transparently as possible the process is shown with the help of models.

There are many different ways of business process modelling. What they have in common is that they present the process graphically. In addition to the graphical presentation, the most important process elements like inputs or outputs are described in detail (Kovačič & Bosilj-Vukšić, 2005, p. 177).

Based on the purpose of the model the models can show different detail levels. Kovačič and Bosilj-Vukšić (2005, p. 178) define the following generic points that each model to be used in the **business process optimization** should demonstrate:

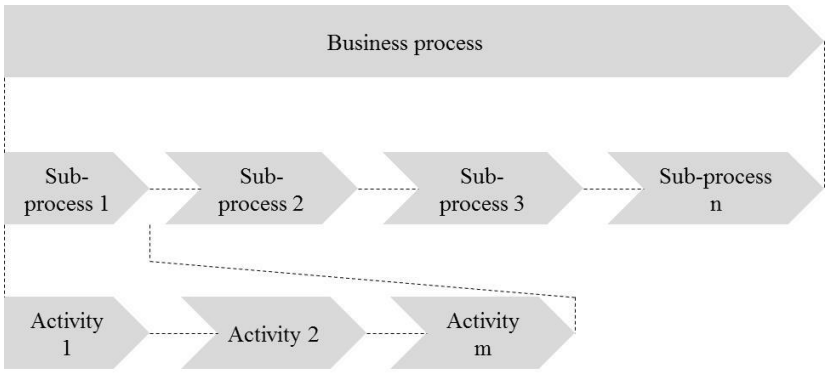
- Deeper understanding of the AS-IS situation
- Complete picture of the process throughout the organization
- Process weaknesses
- Proposed TO-BE process and its simulation
- Need for IT support of the activities which is then the basics for process informatization

2.5.1 Business process modelling guide

As shown in figure 12 every process has sub-processes and activities. When modelling the process, it is important to break down the process as much as possible or needed in order to show all the process activates. Kovačič and Bosilj-Vukšić (2005, pp. 179-180) state that the business process is described by:

- Inputs, outputs, customers of the product/service
- Process limitations
- Activities, adding value and process costs
- Key success factors and
- Process owner

Figure 12. Braking-down the business process



Source: A. Kovačič, & V. Bosilj-Vukšić, *Management poslovnih procesov*, 2005, p. 179.

They further state that the sub-processes represent a group of connected activities that make a whole. These activities are described with:

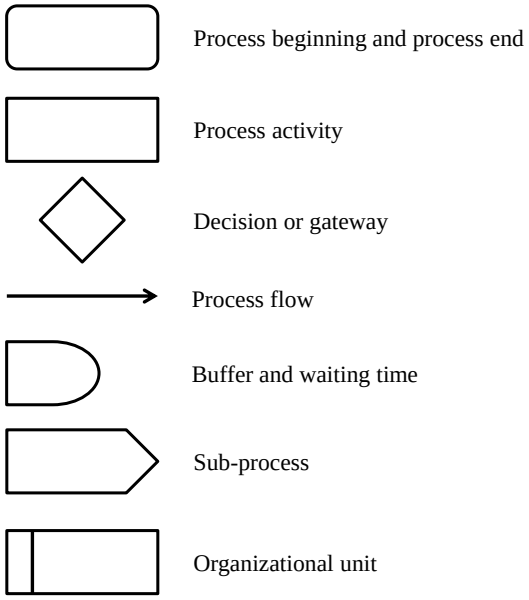
- Process contractor (who does it, how, when)
- Activity input (what, when, from where, how, what form)
- Activity description (what is produced, which tools or information is used, business rules, limitations)
- Activity output (what, what form, where is it going, how is it transported)
- Measurement (time, cost, resources)
- Improvement comments
- Attachments (documents describing the activities and the result)

When making the AS-IS process model, we have to identify all of the activities in the process and analyse their behaviour within the process. These activities have to be presented graphically from the beginning. To make a graphical presentation, we can employ one of many available methods (e.g. **process flow chart**) for business process modelling. We can use a tool (e.g. ARIC or MS Visio) to show a process flow chart. When all the activities are analysed and put into a sequence, the AS-IS model is ready. Looking at the AS-IS model and running simulations on it enables identifying process bottlenecks, utilization and redundant cost and time and it enables suggesting optimization proposals (Kovačič & Bosilj-Vukšić, 2005, p. 181).

A **process flow chart** is a graphical representation of all the elements that make up the process. The process flow charts were originally created in order to coordinate large project that involved very complex sets of activities and a high number of different resources. Even though they were initially developed for large projects, they can be very useful for designing all types of processes. A graphical representation of all the process activities helps us understand the process and the relationships between different activities and identify the process improvement areas as well as highlight any non-value adding activities in the process (Anupindi et al., 1999, p. 61).

In order to make the graphical representation more readable, different geometrical shapes are used which present different types of activities. Figure 13 shows the graphical shapes as presented by one of the authors.

Figure 13. Graphical elements to be used for business process modelling



Source: A. Kovačič, J. Jaklič, M. I. Štemberg, & A. Groznik, *Prenova in informatizacija poslovanja*, 2004, p. 84.

Anupindi et al. (1999, p. 61) present the geometric shapes in a similar way. The only difference is that they use:

- Triangles for buffers
- Dashed arrows for information flow
- Different horizontal colour bends for every single resource in order to distinguish them easily

Rusjan (2009, p. 58), for example, provides only four geometric shapes to present the activities in the process:

- Diamond for decision
- Rectangle for activity
- Arrow to link two activities and
- Triangle for buffers or waiting times

3 PROCESS OPTIMIZATION AT USED CAR REMARKETING DEPARTMENT

In this section I describe the process optimization project carried out at the used car remarketing department (UC RMKT DPMT) at one of the premium automotive brand importers operating in a large European market.

The AS-IS and TO-BE processes are presented on a high level. Due to limitations of the theses I do not describe the processes and sub-processes too much in detail but only focus on the main problem areas of the AS-IS process and give a rough view of the TO-BE process. Nevertheless, when doing the project I described the process on the activity level.

3.1 About the project and the analysed organization

The project's aim is to assess the AS-IS RMKT process and suggest possible process improvement areas. The TO-BE process should include the implementation of an IT tool to support the process.

The analysed organization also named national sales company (NSC) is an authorised new car (NC), used car (UC) and parts importer and is responsible for representing the brand in a specific European market. The NSC is a daughter organization of an original equipment manufacturer (OEM). The main tasks of the NSC are:

- Selling new cars
- Maintaining and developing brand image
- Achieving profit
- Developing dealer and service network and
- Maintaining stable NC and UC market prices

The NSC does not sell the vehicles on a local market by itself but throughout an authorised dealer network. Organizations involved in sales are either independent private organizations or businesses having dealership rights - these can be owned by the OEM. There are high standards to become an authorised dealer and include:

- Premium location
- Architectural standards
- Trained personnel
- Outdoor and indoor communication systems (OCS & ICS)

The OEM is present in the market also as a national finance company (NFC) which provides financing products for NC and UC vehicles for the end customers and financing stock vehicles at the dealerships and vehicles in use by the NSC or NFC.

3.2 Market situation

The analysed NC market for the brand sold by the analysed NSC has shrunk significantly over the past 5 years. Since the peak in 2007 from a total of approx. 80.000 units sold per year to approx. 30.000 units sold in the market last year.

This trend was seen at all brands present in the market and was mainly a reflection of the unstable economic environment and an increase in unemployment and decrease in the average income. The total market fell from approx. 1.600.000 to 950.000 vehicles yearly.

In order to achieve the set NC targets many NSCs in the market decided to register the NCs by themselves or put them for short rent to selected partners for a small fee and later sell them as UCs. This resulted in a huge pressure on the UC market prices as well as on NC prices as the difference between the NC and UC price became bigger and the customers preferred to buy UCs instead of NCs. This created a need for maintaining smart sales channels and creating new ones.

The market change was also a challenge for the NSC in order to handle increased numbers of vehicles in use, their return, preparation and selling processes.

The UCs presented and offered at the dealerships can be first used as NCs as:

- NSC vehicles (employee, press, test vehicles, etc.)
- OEM vehicles (employee, press, test vehicles, etc.)
- Dealer vehicles (employee, demonstration - DEMO, curtsey vehicles, etc.)
- Customer trade in vehicle (old for new, old for old trade in)
- NFC vehicle (employee vehicles, end customer leasing return vehicles) and
- Rental vehicles (rental returns or buy-back (BB) vehicles)

As the spotlight of the analysis was the NSC UC RMKT DPMT only the OEM, NSC and Rental vehicles were taken into focus.

The OEM has a developed strategy of selling used vehicles under a separate program name. If a customer buys a used vehicle promoted under the used car program, he/she also receives some other incentives or benefits (e.g. undamaged vehicle, service maintenance, extended warranty, etc.). This program is known among the end customers allowing the dealers to differentiate themselves from other dealers selling different or the same brand vehicles.

3.3 About the organization I work at

The organization I work at is a business consultancy organization founded in mid 90's. The organization has specialized in the automotive sales optimization with great success.

We have specialized in the automotive sales only and have experience in all business areas associated with sales optimization. This ranges from sales and network strategy over sales/product standards to remarketing processes and IT systems. Within this range of topics we have a special expertise in the area of used car management. One key success factor for our projects is the fact that we understand the key drivers of all sales levels – OEM, NSC, and dealers – which results in balanced approaches and sustainable successes.

One thing accompanies us through all projects – **Passion**:

- Passion for the automotive business
- Passion for the challenge to achieve the highest possible performance for our clients
- Passion for new perspectives that create a competitive advantage for our clients

3.4 Initial situation at UC RMKT DPMT (AS-IS process)

In order to better understand the current situation, I held interviews with different UC RMKT DPMT employees. As not all participants were available at all times, I tried to make the interviews as flexible as possible.

When analysing the received data and comparing different interviewees' answers, I came to a problem - the statements did not match. Brewerton and Millward (2001, p. 74) list poor reliability as one of the disadvantages of the interview technique. In order to come to an exact AS-IS situation, I had to hold second interviews and confront the interviewees with different statements.

When defining the current processes I also relied on observing the employees doing their daily job. Due to the details of their work (e.g. specific calculations when pricing the vehicles), I was not only observing the employees but also working hand in hand with them in order to understand the logic they are using. Mayers (2013, p. 137) describes this method as **participant observation**. The advantage of this compared with the normal observation is that it allows interaction with the employees, giving them specific questions or drawing conclusions.

By repeating the interviews and observing the employees at work, I managed to come to a consensus between the employees about the current UC RMKT process.

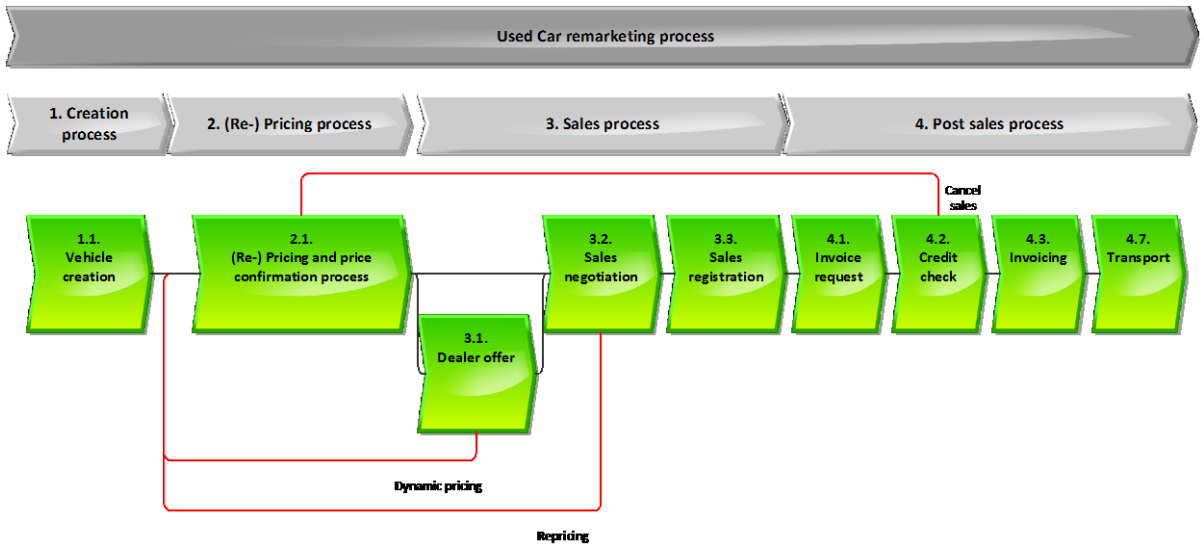
When I later searched for a suitable system tool to support the process and analysed if the system meets the needs of the UC RMKT DPMT I checked secondary sources like business proposals, system presentations and different systems' user manuals. The manuals were not completely helpful as they failed to provide updated versions and were not written on task levels but on the entire system level. The business proposals were, in some cases, obsolete. There were no updated versions taking into account the future changes of the systems. Saunders, Lewis and Thornhill (2012, pp. 319-320) suggest that the biggest disadvantages of the secondary data sources are that the data is collected for a different purpose not matching our needs and that there is no real control over data quality.

In order to overcome this problem I tried to simulate the process using dummy vehicles and vehicle information to process it throughout the different process steps to see whether the system meets the UC RMKT DPMT's needs.

3.4.1 AS-IS process overview

Figure 14 shows the AS-IS RMKT process. The process is task oriented meaning that the tasks follow in a natural sequence. The entire process is supported by locally developed MS Access database called RMKT Web.

Figure 14. AS-IS RMKT process



3.4.2 Creation process

Vehicle creation - is a process indicating how the vehicle information comes to the RMKT Web and consequently physically on the RMKT stock. The UC RMKT DPMT is informed that the vehicle is coming on stock when the following four criteria are met:

- Vehicle was returned at compound
- Ownership change was done (only if not registered in the name of NSC) and the documents were checked and available
- Commercial damage appraisal was done
- Damages and buy back (BB) price were agreed (only if the vehicle was used before by rental company)

These four criteria are maintained in four different excel files saved on the server. The RKMT suppliers can access the files and enter data like:

- Return date and mileage (by compound supplier)
- Damages (by appraisal supplier)
- Ownership change to customer date and documents check date (by NSC dealership)
- Agreed damage recuperation and BB price (by NSC department responsible for rental business)

When the information for the vehicle is available in all the four excel files, the vehicle is created in the RMKT Web automatically via scripts developed by the NSC IT.

3.4.3 (Re-) Pricing process

Initial pricing - when the vehicle is on the RMKT stock it is decided whether it should be immediately priced and offered to customers or not. This depends on a number of similar vehicles that have already been offered to the dealers. The main focus of the RMKT DPMT is not to flood the sales channel as this would lead into lowering the UC market price. Pricing of the vehicles is performed in an excel file, taking into consideration:

- NC price
- Mileage
- Age
- Additional equipment
- Damages
- Profit target
- Achieved UC price in the past for similar vehicles

Price confirmation - the prices are confirmed by two managers in the UC RMKT DPMT. The information is then entered into RMKT Web and the priced vehicles are automatically published and visible to all authorised dealers.

Re-pricing - if the vehicle is offered for a longer period and not sold the re-pricing is needed and is performed in a similar way as initial pricing.

3.4.4 Sales process

Dealer offer - every dealer has his/her own access rights to the internet stock locator to see all the published UCs. The stock locator is a part of the RMKT Web. When deciding to buy a vehicle the dealer selects it and puts it into the shopping cart via stock locator.

Sales negotiation - the dealer can also call the assigned area sales manager (ASM) and request a better offer or a package discount when taking multiple vehicles at once. Based on the outcome the ASM can request a re-pricing of vehicles if needed.

Direct offer - some vehicles are offered to dealers directly by ASMs (without being published). In this way the dealers do not get information about the number of vehicles on NSC stock. This helps preserving the sales channel's UC prices.

Sales registration - when the vehicle is sold, the respective dealer information is entered into the RMKT Web and the vehicle gets automatically de-published.

3.4.5 Post sales process

Credit check - it has to be checked if the dealer has sufficient credit lines to invoice the UC on his/her stock. If not, the dealer has to pay the older cars from the credit line or pay this specific vehicle in advance before invoicing. If the dealer cannot provide a sufficient credit line or pay for the vehicle, the sales information is deleted and the vehicle is offered again.

Invoicing - of the vehicle is done outside of the RMKT Web. The invoicing relevant information needs to be entered into the invoicing system to create a UC invoice. After the invoice is done, the invoice creation is marked in the RMKT Web accordingly.

Transport - after the vehicle is invoiced the UC has to be transported to the customer. A transport order is sent to a NSC dealership and they order the transport at their transport supplier.

Ownership change to customer (OSC2) and document sending - After the vehicle is sold, the OSC has to be done to the customer. After creating the UC invoice, the UC invoice is sent via mail to the document supplier to handle the OSC2. When the vehicle is paid, the documents are sent to the customer. The payment information is provided by the NFC directly to the document handler. These steps are currently not covered within the RMKT process.

3.4.6 Reporting

Every week management requests standard reports with the main KPIs (e.g. sales, stock, etc.). Information about the basic KPIs is available in the RMKT Web. For any more detailed reports, e.g. planning reports, the information is not available. It takes a lot of effort to get all the needed information and to prepare the reports manually.

Also some reports like days from return till ready for sales are not possible as the necessary information is not completely available.

3.5 Identifying process improvement areas

After having examined the AS-IS process I focused on the possible improvement areas. As a starting point I took the process deficiencies within the UC RMKT DPMT already recognised by the employees. In addition I also consulted my mentor and co-workers and then suggested some improvements based on our years of work with the UC RMKT processes.

Vehicle creation - the information about the new vehicles comes to the UC RMKT DPMT too late. The UC RMKT DPMT should have an overview of the vehicles' usage in order to request a vehicle from the user to return it earlier if needed. In this way the RMKT DPMT could achieve the maximal possible price or already sell the vehicle during the usage.

Also the control over the suppliers performing the compound entry, appraisal, OSC1 and document check is not sufficient. In some cases vehicles are over 180 days physically on stock before being reported to the RMKT Web. The reason is that in some cases the format of the data entered is not correct (e.g. 11.11.2011 is written 11/11/2011) resulting in the fact that formulas built in the RMKT Web cannot verify the vehicle as on stock.

The pipeline process and return and ready for sales processes need to be incorporated into the UC RMKT process.

Pricing - there is no fixed dynamic pricing logic implemented. Also not all vehicles are priced. In case a dealer is interested in a vehicle that is not offered but on stock, the vehicle has to be first priced before offered. If the managers are not in the offices to confirm the prices, the vehicle cannot be offered to the dealer. This results in lost sales.

In addition to that, in some cases newly priced vehicles are less expensive than older vehicles as the profit target changed. The change was taken into consideration for newly priced vehicles but not for the already priced vehicles. The result is that dealers buy newer cars for lower prices. The old vehicles stay on stock and have to be additionally discounted.

Sales channels - currently the vehicles are offered to the dealers via the stock locator. To make offers more interesting and to boost sales, vehicles can be offered to the dealers via **package sales** or **closed auctions**. The non-interesting vehicles can be later offered also to other non-authorised dealers via **open auctions**, **domestic or international**.

The vehicles can be at the same time offered to the dealers and to **end customers**. The later would be able to purchase by price increased for the target dealer margin, repair costs and handling costs.

If the dealers do not show interest in buying high priced vehicles on their stock, these vehicles can also be put on a display at the dealerships' premises as consignment vehicles. In this case it is more likely that customers will see the vehicles and buy them and dealers do not take a risk of loss in value if taking the vehicle on stock.

Offering vehicles through different sales channels requires different UC prices. A new pricing logic has to be set taking into account price development over the sales channels.

Transport - to avoid double work, transport should be ordered directly by the supplier, not via NSC dealership. All the transport details should be available in the system which allows tracking the location of the vehicle.

Ownership change to customer (OSC2), document sending and insurance - to control the OSC2 process, the process should be integrated into the RMKT process. The same applies to the document sending and insurance processes.

Invoicing - there should be a direct interface connecting the new RMKT system and the invoicing system to eliminate manual work of copying the information from one system to another.

Implementing a system/tool to support the process – the current RMKT Web only covers the process from the point when the vehicle is ready for pricing. In order to control the vehicle also when it is in usage, the new solution has to cover the vehicle's lifecycle from the moment it is put in use to the time when it is delivered to the customer together with all the documents.

The new solution should also support many different sales channels and therefore also different price settings for a vehicle (dealer price, end customer price, auction price, package price, etc.).

The tool should also support the connection with the sales platform where the dealers and/or end customers could see and buy vehicles.

The OEM's high standards about the data security do not allow MS Access based solution to handle delicate information. This means that it is not possible to develop the currently used tool.

The current solution does also not support multiple users working with the tool at once. As the new process will be more complex and involve more people and integrate suppliers into the UC RMKT process the new solution has to be able to cover multiple users. As a specific user only needs specific access, the tool should allow different access rights levels.

Reporting - currently all the process control and planning is done by preparing all the reports manually. This consumes a lot of time every week. Standard reports should be created in order to have all the needed KPIs automatically on display with as little effort as possible.

Management needs more KPIs (especially on stock forecasts and supplier performance) in order to take the right decisions.

3.6 Business case

By analysing the current and past stock and sales figures I came to following conclusion. The average time needed for a rental vehicle from vehicle return till ready for sales was on average 93 days for the first 50% of vehicles and 77 days for the first 80% of vehicles.

Taking into account the average stock cost of 20€ (internal information) per day and the potential time reduction between return and RfS of 40 days (the return and RfS time would still be approx. 40 days), the saving can amount to 800€ per vehicle.

Similar gains in stock days reduction can also be achieved during the sales process by using different sales cascade (e.g. reduction of 50 days or additional 1.000€ per vehicle). Knowing the number of all vehicles processed in the organization, the total saving potential is measured in milions of euros.

Figure 15. Business case

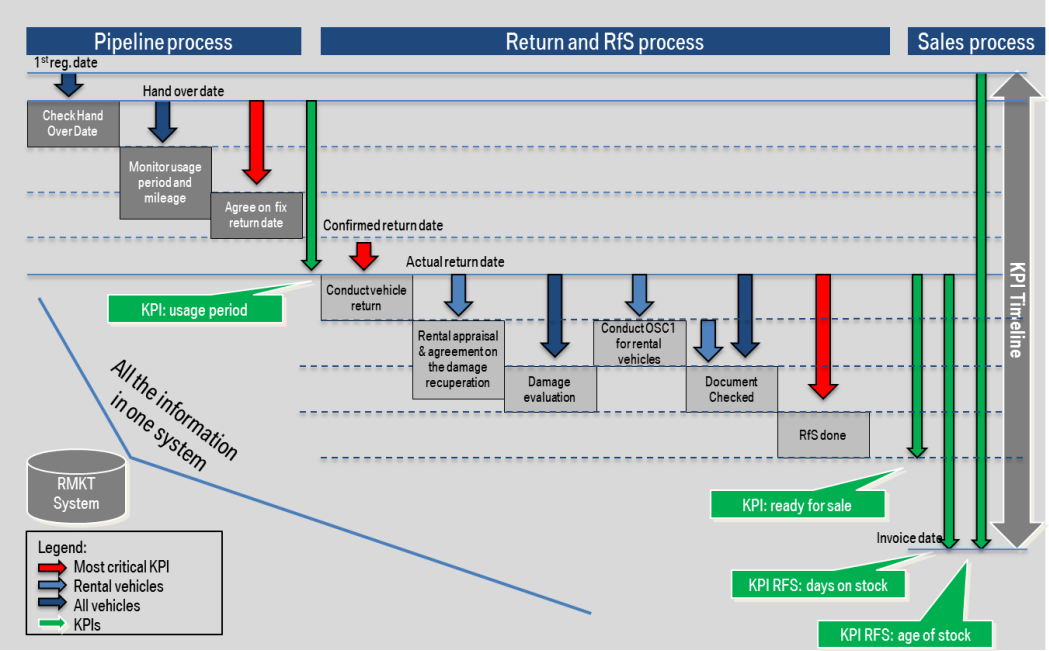


Figure 15 shows the major KPIs to be monitored in order to achieve the maximum possible reduction in stock days. Figure also nicely shows that not all sub-processes are performed in sequence but can be done in parallel.

3.7 Proposed process (TO-BE process)

First I prepared different simulations of the TO-BE process proposal and presented them to the UC RMKT DPMT. When I had the TO-BE processes agreed upon with the UC RMKT DPMT I started looking for an off the shelf system/tool and for an internally developed tools (by the OEM or other NSCs).

Finally after comparing different tools, I decided for an internally developed one by the OEM. As the system did not completely cover the TO-BE process, I prepared the change requests (CRs) for the tool and also adapted some less important sub-processes in order to have a running system supporting the TO-BE process.

Based on the experience we estimated that a tool that covers more than 80% of the required functions and/or processes is worth implementing and the missing functionalities and/or sub-processes can be adapted in the near future.

One of the missing functions, for example, is an interface for the invoicing system. The absence of the interface still requires manual work of entering the information from one tool to another but this does not affect the whole process and does not make the invoicing sub-process worse than it was before. For this I prepared a CR to be implemented in the near future.

3.7.1 TO-BE process overview

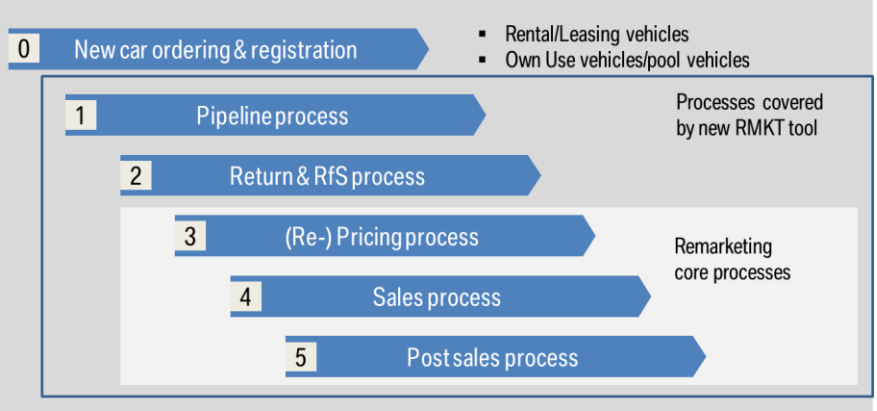
Figure 16 shows the proposed high level TO-BE UC RMKT process already including the future coming changes to the system. In the process documentation handed over to the customer and employees I described the exceptions in the process and temporaly workarounds. The thesis highlights the biggest changes in the process and the advantages of these changes. The detailed TO-BE process overview is shown in Appendix B.

The TO-BE process is extended to include:

- Vehicle pipeline process and
- Return and ready for sales (RfS) process

This enables the RMKT DPMT a better control over the vehicle usage period and over the return and ready for sales period. The main focus of the process optimization was on getting the vehicles ready for sales as soon after their return as possible.

Figure 16. TO-BE RMKT process



3.7.2 Categorisation of vehicle sources

It is important to define clear user groups or vehicle user categories in order to have a good overview on the vehicles during the vehicle usage.

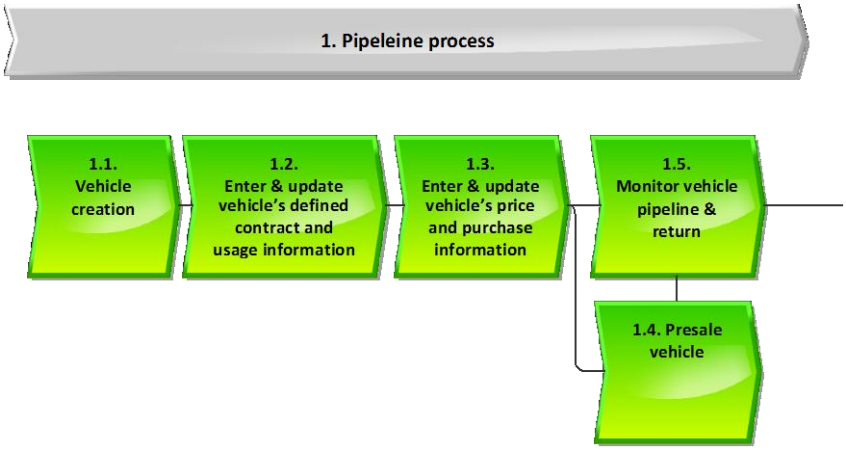
As mentioned before, the new process should include only the OEM, NSC and Rental vehicles. Currently there are no OEM vehicles imported into the market due to the difficult market situation and high NSC UC stock. The NSC vehicles can be further divided based on the employee vehicles and different pools using the vehicles (e.g. Employee, Press, VIP, etc.). Employee vehicles can be further marked with the name of the employee driving the vehicle. Rental vehicles can be categorized based on the rental company using the vehicle.

3.7.3 Pipeline process

As shown in Figure 17, the pipeline process had to be developed from start as there had been no real pipeline process before. Some processes were performed by other departments and

some are still being performed but the UC RMKT DPMT now has a control function over these processes.

Figure 17. TO-BE Pipeline process



Vehicle creation process – the NSC and Rental vehicles can be created in the UC RMKT system in two different ways:

- Automatically via the interface to the NC ordering system
- Manually via GUI (Graphical User Interface) in the RMKT system directly

When the vehicle is put in use, the registration details are entered into the NC ordering system. When this is done, the information is automatically transferred via the interface to the RMKT system and the vehicle is created with all the needed basic information. If for any reason the information is not transmitted, the vehicle can still be created manually.

When the vehicle (vehicle information) is created in the RMKT system (manually or through the interface), the vehicle basic information (e.g. option description, technical data, etc.) is sent via the interfaces to the other NSC and OEM systems.
To insure the correctness and availability of information in the system the RMKT DPMT has to **enter and update the vehicle's defined contract and usage information** and **enter and update the vehicle's price and purchase information.**

During the usage the RMKT DPMT has to **monitor the vehicle's pipeline and return** information. Having the right and updated pipeline information in one system allows the UC RMKT DPMT to plan the sales and stock for months that follow. It also allows the UC RMKT DPMT to prepare the sales campaigns, plan budget reservations and supplier capacities (e.g. compound space, repair planning, etc.).

The most important is that the UC RMKT DPMT is actively involved in controlling and steering:

- Early return of the vehicles with too high mileages

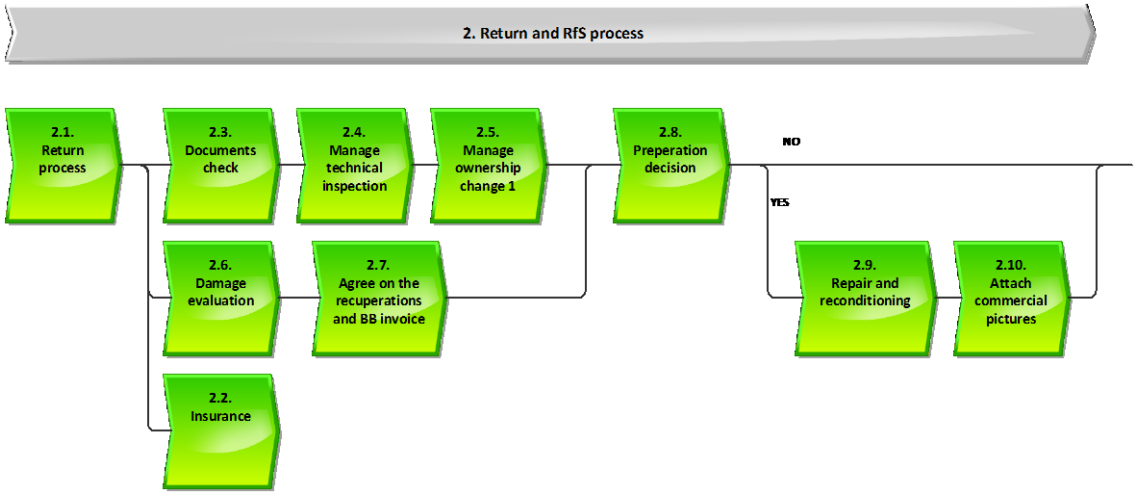
- Early return if there is already a customer for the vehicle and
- Change of the users if some vehicles have too low mileages

Presale vehicles - during the time the vehicle is in use, the UC RMKT DPMT should already be looking for a customer if not already presold before the vehicle was put in use. The presale process is not supported by the system but can be done outside of it and if the vehicle is presold, the customer information and price are to be entered into the RMKT system.

3.7.4 Return and ready for sales (RfS) process

The return and RfS sub-processes were in the past performed by the suppliers and were an input into the process. Now the return and RfS sub-processes, as shown in Figure 18, are integrated into the UC RMKT process and the suppliers are to be actively working with the RMKT system.

Figure 18. TO-BE Return and RfS process



The following sub-processes are performed by the RMKT DPMT suppliers:

- Return process by compound suppliers
- Damage evaluation by appraisal suppliers
- Insurance by insurance supplier
- Document handling, OSC1 and technical inspection by document supplier and
- Repair and refurbishment by repair suppliers

All the suppliers are integrated in the process and use the system in order to enter relevant information. The main advantage is that the RMKT DPMT can monitor the performance of the suppliers by the number of vehicles processed or by the time needed to process a vehicle. The biggest gains in terms of time savings to process the vehicles are expected at this point.

3.7.5 (Re-) Pricing process

The political decision was taken by the UC RMKT DPMT that the pricing will still be done as before, using MS Excel. The process did not change significantly. The only modification is

that as more sales channels are now available the vehicle has to be priced differently based on the sales channel in which the vehicle is offered.

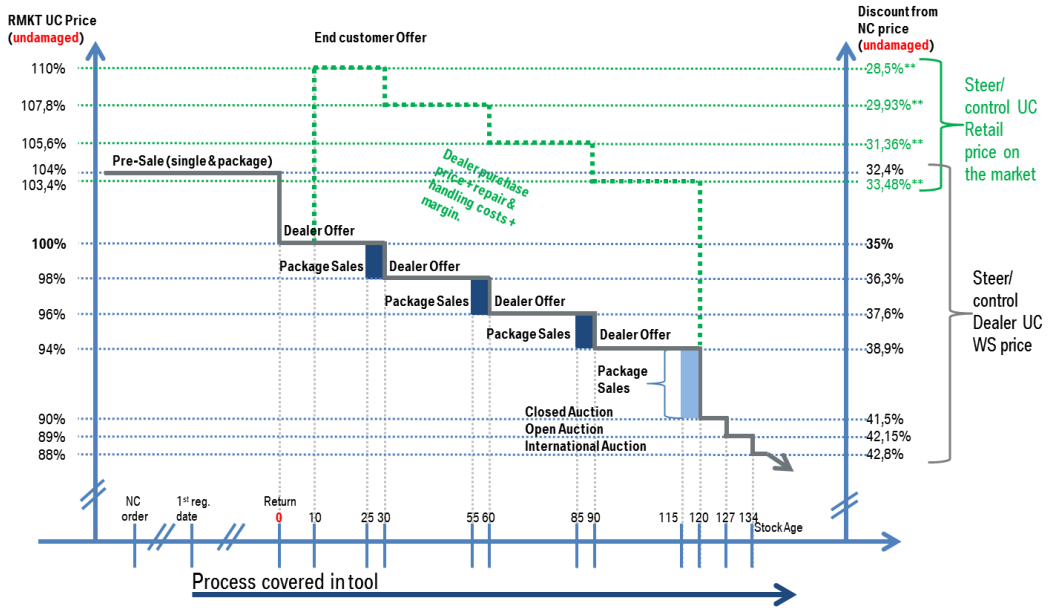
Initial pricing - after knowing the condition that the vehicle is in, it can be priced. The vehicle is going to be priced initially only to be offered to the dealers. If later it is decided to offer a vehicle through other sales channels (e.g. auction, package, etc.) other pricings will be done as well. The set price has to be confirmed before the vehicle can be published.

Re-pricing - if the vehicle is on stock for a longer period, it should be re-priced based on the pricing guideline.

3.7.6 Sales process

As already mentioned, a new sales cascade was agreed upon with the UC RMKT DPMT in order to be able to offer vehicles to additional customers. It is very important that the UC RMKT DPMT takes great care in selecting the right vehicles for a specific sales channel and not to flood the sales channel with too many similar vehicles. With a smart sales cascade as shown in Figure 19, the RMKT DPMT can try to influence the market retail and wholesale prices.

Figure 19. TO-BE Sales cascade



Dealer offer - the most important sales channel is offering the vehicles to the authorized dealers in the market via the stock locator. The stock locator is a part of the RMKT system and the dealers can buy vehicles using the shopping cart logic.

End customer offer - at the same time as the vehicle is offered to the dealers, it can also be offered to end customers via the stock locator on the internet home page or via the most important stock locators in the market.

The system has interfaces developed to transmit information to the internet home page and also to the most important market stock locators automatically. The end customer can contact an authorised dealer if interested in a vehicle and the entire sales process is done by the dealer. The dealer also sees in the RMKT system vehicle details as well as the end customer price calculation details.

Package - less attractive vehicles can be put in a package with other more interesting vehicles and offered to dealers in a package. The system supports package composition and package discount price setting.

Consignment - the dealers are not likely to buy more expensive vehicles on stock. This also means that the customers will not have a chance to see these vehicles in person. In order to take away the risk from the dealer, the vehicle can be put on the consignment to a selected dealer. For this purpose, consignment contract has to be signed between the UC RMKT DPMT and the dealer.

Afterwards the vehicle is to be transported to a dealer and repaired (if necessary) before put on display. The whole consignment process together with the automatic generation of the consignment contract is covered within the system.

Auction - it is difficult to set the initial price for the vehicles with special configurations. One way of attempting this (that should also bring the best possible results) can be to put the vehicle on auction and let the market indicate whether the price setting was correct.

Auctions can also be employed to boost sales or to offer vehicles to other non-authorised dealers in the domestic market or abroad.

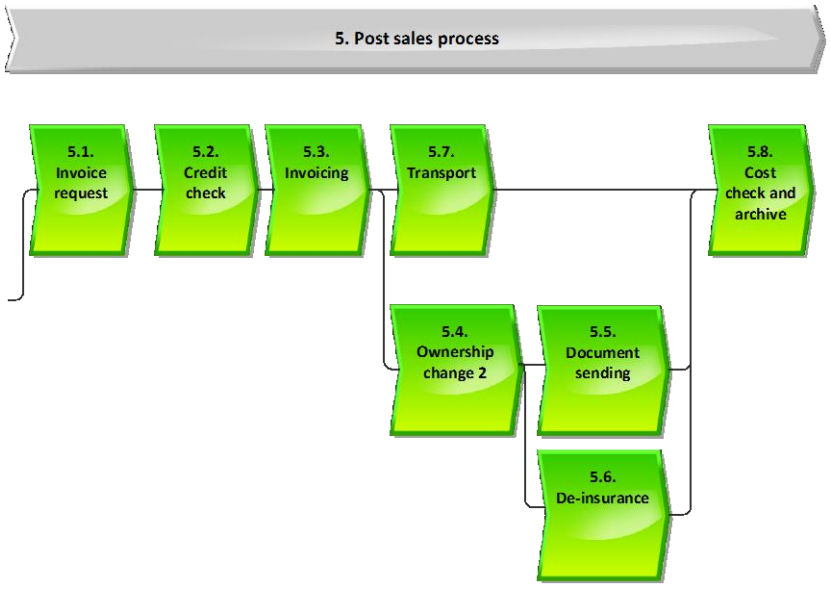
The system supports the auction composition but no auction platform has been integrated yet. The auction package details are sent to the auction suppliers and they perform the auctions in their system. They also have larger customer bases. After the finish of the auction, the auction results are entered into the system.

The auctions can be virtual or physical. In case of the physical auction the vehicles have to be transported to the auction location.

3.7.7 Post sales process

The post sales sub-processes are also integrated into the process (as presented in Figure 20) in order to control the suppliers and to ensure the sub-processes are performed in respective times.

Figure 20. TO-BE Post sales process



Cost check and archive - when the vehicle is sold, delivered to the customer and all the documents arranged, the costs have to be checked.

This is important in order to have an overview of the vehicle's margin, to control the costs and to identify any possible saving potential.

After the vehicle is processed through all the steps, the data can be archived. The vehicle will not be shown anymore in any of the process queries in the RMKT system but the basic information could still be accessed by a single vehicle search query.

3.7.8 Reporting

Standardised reports were created in the MS Excel in order to control and steer the UC RMKT process. The UC RMKT DPMT exports the information from the system and copies it into a predefined tab in an excel report file on daily basis.

Then all the required KPIs (e.g. sales by months, sales by dealers, stock, number of vehicles at different process steps, etc.) are calculated automatically giving basic information to the management and to the UC RMKT employees about the current and future situation.

CONCLUSION

Reading different authors explaining their views on the process and process optimization methods gave me a better insight into the process optimization. I successfully used the gained knowledge during the execution of the project described in the practical part as well as I will employ it in my future projects.

It is interesting to note the big differences in process optimization theories and the various naming of the methods. I do realise that the methods were developed during a long period of time but I still expected to find a common understanding of the methods provided by different authors.

It is interesting that the older authors do not focus on the IT supported processes as in the past there were not many computers and also the IT solutions were not available and the employees did not know how to use computers even if the organization would decide to implement an IT solution. Nowadays everybody is capable of using computers. In addition, the incorporation of suppliers and customers into the process is easier due to the internet which had not existed until 20 years ago.

On the other hand, it was really useful to gain different approaches on how to do the business process optimization as I will probably need different approaches when dealing with different projects in my career.

The gained theory helped me better understand the AS-IS processes and better evaluate and optimize the processes. The part that I think that the authors should focus on more is the implementation of the new process (this was not the focal point of any author). I found these explanations in Change Management theory but due to the limitation of the thesis I was not able to address this topic more in detail.

During the project I realised that it is not only important to make a new and improved process but also to implement it successfully in the organization. Based on my experience, this is the harder part. I had quite some problems in implementing the described TO-BE process in the organization. When faced with a similar project next time, I will rather concentrate more on the implementation part already from the very beginning.

As in the thesis I focus on reengineering the process, I had to put the small improvements that have to be introduced in the organization now as the new process is implemented aside. I was only contracted for the reengineering of the process, therefore further steps need to be taken by the organization itself. Nevertheless I have prepared the future system change requests and descriptions of how the system will work after being implemented, but the UC RMKT DPMT has to take care that the changes are implemented and the new process is aligned. With the high workload the employees have, I believe they will still need some outside support with these tasks in the future.

SUMMARY

Uvod

Namen diplomskega dela je pridobiti dodatna teoretična znanja o poslovnih procesih, delih poslovnih procesov, ciljih poslovnih procesov in različnih metodah optimizacije poslovnih procesov, ter iz teh metod izvleči poti oziroma korake, ki so potrebni pri optimizaciji poslovnih procesov in kateri mi bodo koristili pri moji prihodnji poklicni poti.

Cilj diplomske naloge je uporabiti ta znanja pri analizi, oceni in predlaganju sprememb obstoječega procesa v oddelku prodaje rabljenih vozil pri uvozniku premium vozil na večjem evropskem trgu.

Preučevani proces trenutno ni podprt z ustreznim informacijskim sistemom, kar vodi k velikemu številu napak, dolgim procesnim časom in pomanjkanju preglednosti, ki se kaže v nepoznavanju števila vozil v posameznih korakih procesa. Trenutni proces tudi ne vsebuje vseh ključnih podprocesov. Posledica je, da odgovorni v oddelku nimajo na razpolago vseh potrebnih informacij za prave poslovne odločitve.

Da bi razumel optimizacijo procesa se najprej osredotočim na teoretično spoznavanje poslovnega procesa, delov poslovnega procesa, ciljev in kako te cilje merimo in jih ovrednotimo. Nato prikažem metode optimiziranja procesa, ter njihove slabosti in prednosti. Eno od predstavljenih metod, katero kasneje uporabim v praktičnem delu, tudi podrobneje opišem in predstavim generične korake, kako optimizirati proces.

Potem ko spoznam teoretično odzadje optimizacije procesa podrobneje predstavim predmet preučevanja, preučevano organizacijo, tržno situacijo ter prikažem trenutni proces, predlagam izboljšave procesa, ter predlagam nov proces. Prednosti novega procesa tudi podkrepim z vidika zmanjšanja časa procesa in stroškov.

Naj tu še omenim, da je bil predlagani proces uspešno vpeljan v preučevano organizacijo v letu 2013.

Poslovni proces

Če gledamo na proces kot na transformacijo vhodnih enot v izhodne je lahko proces vsaka organizacija ali del organizacije. Poslovni proces pa je definiran kot logični skupek povezanih izvršnih in kontrolnih postopkov ter aktivnosti, katerih cilj je proizvod ali storitev. Poslovni proces lahko opišemo tudi kot zaporedje postopkov oziroma aktivnosti, katerih namen je ustvarjati dodano vrednost, medtem, ko se vhodne enote preoblikujejo oziroma transformirajo v izhodne.

Celotni proces transformacije vhodnih enot v izhodne je potrebno tudi nadzorovati. To poteka na dveh nivojih. Prvi nivo je **povratna informacija** ali je izhodna enota zadovoljiva za

stranko oziroma uporabnika. Drugi nivo je **kontrola** samega procesa z vidika porabe sredstev in kontrola vhodnih enot pri ustvarjenju izhodnih enot.

Ko tako gledamo globlje v transformacijo ugotovimo, da je celotni proces sestavljen iz petih delov, ki jih sestavljajo:

- **vhod,** kjer tečejo enote iz okolja v proces in **izhod,** kjer tečejo enote iz procesa nazaj v okolje,
- **enote toka**, ki tečejo skozi proces (vhodna enota, izhodna enota, polizdelek, enota vmesnega ali končnega izdelka, itd.),
- **mreža aktivnosti in blažilnikov aktivnosti** (logično povezane aktivnosti, ki spremenijo vhodne enote v izhodne),
- **sredstva** (delo in kapital poimenovna širše, potrebna za preoblikovanje vhodnih enot v izhodne) in
- **informacijska struktura**, ki omogoča nadzor nad procesom z vidika učinkovitosti in uspešnosti.

Ko podrobno opišem proces in dele procesa, se osredotočim na spoznavanje ciljev procesa. Cilji procesa so različni glede na prejemnika oziroma uporabnika izhodne enote. V primeru, da je prejemnik oziroma uporabnik stranka, je izhodna enota **proizvod** ali **storitev**. Glavna razlika med proizvodom in storitvijo je, da storitve ni mogoče proizvajati na zalogo. To pomeni, da je stranka fizično vključena v storitveni proces (npr. frizerske storitve, itd). V primeru, da je prejemnik organizacija, je izhodna enota običajno **dobiček**, ki se meri kot razlika med **dodano vrednostjo** procesa in **stroški** procesa.

Rezultat procesa je lahko tudi **nezaželen proizvod**. To je običajno **odpadni material**, ki se lahko uporabi ponovno v procesu ali pa **odpadek** (npr. umazana voda pri pranju vozil, itd.). V nekaterih primerih je nezaželen izdelek lahko povezan z velikimi stroški, predvsem ko se v procesu uporabljajo strupene snovi ali kemikalije (npr. jedrski odpadki, itd). Tako lahko rečemo, da je eden izmed ciljev procesa tudi **minimiziranje nezaželenih proizvodov**.

Stranke kupujejo proizvode oziroma storitve, ker jim prinašajo določeno zadovoljstvo oziroma dodano vrednost. Tako je lahko cilj procesa tudi lastnost, ki jo stranke pri proizvodu oziroma storitvi cenijo:

- cena,
- dobavni rok oziroma razpoložljivost,
- raznolikost in
- kvaliteta, ki jo lahko delimo na:
  - lastnosti oziroma značilnosti,
  - zmogljivost in
  - zanesljivost.

Nekatere od teh lastnost se medsebojno izključujejo, kot na primer, cena in kvaliteta ter dobavni rok in raznolikost.

Če podrobneje analiziramo aktivnosti v organizaciji kot **verigo vrednosti** ugotovimo, da so v organizaciji prisotne aktivnosti, ki v očeh kupca:

- dodajajo vrednost in
- ne dodajajo vrednosti proizvodom oziroma storitvam.

Aktivnostim, ki dodajajo vrednost pravimo tudi **primarne aktivnost,** katerih namen je zadovoljiti potrebo kupca, oziroma uporabnika storitve ali proizvoda. Aktivnosti, ki ne prinašajo dodane vrednost, pa imenujemo **podporne aktivnosti,** katerih naloga je razvijati in kontrolirati primarni proces. Tako definirane podporne aktivnosti lahko le posredno prispevajo k dodani vrednosti.

Da bi ugotovili ali proces dosega zastavljene cilje, moramo proces tudi meriti. Proces lahko merimo glede na to v kakšni meri zadovoljuje lastnosti, ki jih ceni stranka. Tako pridemo do naslednjih meritev:

- strošek procesa,
- čas procesa,
- fleksibilnost procesa in
- kvaliteta procesa.

Da pa bi vedeli ali so dosežena merjenja sprejemljiva, si moramo najprej zastaviti cilje posameznih meritev, oziroma standarde s katerimi lahko kasneje primerjamo meritve. Pri postavljanju standardov meritev je pomembno, da lahko organizacija vpliva na vzroke, ki so privedli do takih rezultatov. Ena od takih razmejitev kazalcev je na:

- zunanje (običajno mnenje kupca oziroma uporabnikov izdelkov ali storitev, itd.),
- notranje (čas procesa, strošek procesa, itd.),
- finančne (dobiček, prihodki, stroški, čas trajanja zaloge, itd.) in
- operativne (število enot v procesu, zaloga, potreben čas da enota zapusti podproces, itd.).

Optimiziranje procesa

Proces je mogoče optimizirati z vidika večje **učinkovitost procesa** preko:

- informatizacije procesa,
- odstranitvijo nepotrebnih aktivnosti,
- avtomatizacijo opravil,
- boljšim dostopom do informacij in
- izboljšano komunikacijo med vpletenimi osebami.

Poleg učinkovitosti procesa je pomembna tudi **uspešnost procesa,** saj je neuspešen proces možno izvajati na učinkovit način. Uspešnost procesa lahko izboljšamo preko:

- uvajanja večjih sprememb,
- ponovne opredelitve procesov ali
- ponovne opredelitve proizvodov ali storitev.

Poleg učinkovitosti in uspešnosti procesa je potrebno izpostaviti tudi pomembnost doseganja **strateškega cilja** organizacije. Strateški cilj je pomemben, da se organizacija diferencira od konkurence in si tako zagotovi pot do **konkurenčne prednosti**. Strategija je lahko, da bo organizacija ponujala določen proizvod po najnižji možni ceni ali pa da bo ponujala proizvod najvišje kakovosti po višji ceni.

Konkurenčna prednost pa se nato doseže preko optimizacije verige vrednosti v organizaciji, ki ustreza zastavljeni strategiji.

Tako strateški cilji kot konkurenčna prednost vodita k večjim dobičkom, prvi preko **strateškega pozicioniranja** in drugi preko **operativne učinkovitosti**.

Optimizacijo procesa lahko dosežemo preko **stalnih izboljšav** in **prenove poslovanja**. V preteklosti se je oblikovalo mnogo različnih metod, kako optimizirati proces, ki so bile močno podvržene razvoju oziroma omejitvam informacijske tehnologije v obdobju razvoja. Glavne metode optimizacije procesa, ki so se razvile skozi čas so:

- **Celovito upravljanje kakovosti** (Total Quality Managemnt – TQM), ki se osredotoča na kakovost proizvodov in storitev, pretežno znotraj oddelkov v organizaciji. Slabost metode je, da ne prinese velikih sprememb v organizacijo.
- **Prenova poslovnih procesov** ali **reinženiring** (Business Process Reengeneering – BPR), ki se osredotoča na enkratne obsežne spremembe v izvajanju procesa in zajema celotno organizacijo in sega tudi izven nje (integracija kupcev in dobaviteljev v proces). Slabost metode je, da je ni mogoče konstantno ponavljati, ker vodi do izčrpanja organizacije.
- **Celovita prenova poslovanja** (Business Process Managemnt – BPM), ki zagotavlja kombinacijo različnih metod in orodij katerih cilj je doseči konkurenčno prednost pred ostalimi. Z kombinacijo obeh prej naštetih metod je možno izničiti slabosti obeh metod. Celovita metoda poslovanja se tudi zaveda omejitev določenih metod in je bolj naravnana k uporabi prave metode v določeni situaciji.

Ker je cilj, v diplomskem delu zastavljenega projekta, korenita sprememba obstoječega procesa, je najbolj ustrezna metoda optimiziranja procesa **reinženiring.** Zato se v nadaljevanju poglobim v ključne faktorje uspeha in neuspeha reinženiringa in korake, ki jih je potrebno izvesti pri reinženiringu poslovnega procesa.

Ključni faktorji neuspeha reinženiringa poslovnih procesov so:

- Projekt optimiziranja se je končal predčasno. Glavni razlog je dolgotrajen proces optimiziranja in planiranja, kar vodi v izčrpanost in frustracijo zaposlenih. To vodi tudi do verjetnosti neuspeha prihodnjih projektov.
- Izboljšave niso dolgoročno vzdržne. Vzrok je lahko, ker je trenutni cilj je dosežen ob prekomerni izkoriščenosti zaposlenih ali ker je cilj projekta prekomerno zmanjšanje zaposlenih.
- Izboljšava je zaznana le na določenih področjih. Projekt ni popoln neuspeh vendar ne kaže zastavljenih ciljev.

Glavni faktorji uspeha reinženiringa poslovnih procesov so:

- **motivacija vrhnjega managementa** v spremembe,
- **dodeljen projektni manager**, ki vodi projekt prenove,
- **zaupanje srednjega managementa** v projekt prenove,
- **vizija** prihodnosti organizacije,
- **osredotočenost** v cilje prenove,
- **določene vloge in odgovornosti** vpletenih v projekt,
- **cilji** prenove morajo biti jasni in merljivi,
- nov proces mora vključevati **informatizacijo in/ali avtomatizacijo procesa** ter
- **strokovnjaki iz področja** morajo ne le nadzirati, ampak tudi svetovati in podpirati zaposlene.

Te glavne faktorje neuspeha in uspeha moramo imeti v mislih, ko smo soočeni s projektom reinženiringa. Preden pa pričnemo z reinženiringom poslovnega procesa moramo predhodno definirati:

- **cilj procesa,**
- **odgovorno osebo** za proces,
- **začetek in konec** procesa,
- **vhodne in izhodne enote** v procesu,
- **zaporedje aktivnosti** v procesu,
- **ravnanje v primeru neskladnosti** procesa,
- **merjenje procesa in standarde,** ki omogočajo identificirati odstopanja v procesu,
- **notranje in zunanje kupce in dobavitelje**.

Ko imamo na voljo zgoraj naštete informacije, se lahko osredotočimo na sam proces izvajanja reinženiringa. Generični koraki reinženiringa procesa so:

- definiranje problemov obstoječega procesa in ciljev prihodnjega procesa,
- zbiranje informacij o trenutnem procesu in priprava jasne slike trenutnega procesa,
- izgradnja novega procesa in

- reorganiziranje organizacije, izobraževanje zaposlenih, opremljanje zaposlenih in organizacije z orodji ter vpeljava novega procesa.

Pri pripravi jasne slike trenutnega procesa nam je lahko v pomoč tudi grafični prikaz, ki mu rečemo modeliranje procesa. Ker se v diplomskem delu ne spuščam v podrobnosti na ravni aktivnosti procesa, ampak proces prikažem na ravni podprocesov, se tudi v same tehnike modeliranja ne spuščam podrobno. Prikažem le bistvene značilnosti, ki naj bi jih orodje za modeliranja procesov imelo. Orodje za modeliranje naj omogoča:

- podrobnejše razumevanje trenutnega procesa,
- sliko procesa skozi celotno organizacijo,
- prikaz slabosti procesa,
- predstavo prihodnjega procesa in njegovo simulacijo in
- prikaz potrebe po podpori procesa s strani informacijskega orodja.

Optimizacija procesa v oddelku prodaje rabljenih vozil

Ko tako spoznam teoretiöno odzadje optimizacije procesa se osredotočim na predmet preučevanja, opis preučevane organizacije, tržne situacije in **prikažem trenutni proces**. Trenutni proces analiziram ter **predlagam izboljšave** in **prikažem bodoči poslovni proces**.

Predmet preučevanja so procesi v oddelku prodaje rabljenih vozil, ki je del organizacije odgovorne za uvoz in prodajo novih in rabljeni vozil premium razreda, ter rezervnih delov na večjem evropskem trgu, v nadaljevanju: uvoznik.

Uvoznik je hčerinska družba organizacije, ki ima v lasti preučevano blagovno znamko vozil, v nadaljevanju: proizvajalec. Prodaja vozil na trgu ne poteka direktno preko uvoznika, ampak preko vzpostavljene pooblaščene trgovske mreže. Posamezne prodajalne so lahko v lasti uvoznika ali pa v lasti tretjih oseb.

Da bi razumeli proces, najprej predstavim različne vrste rabljenih vozil, oziroma kako organizacija pride do rabljenih vozil. Rabljena vozila se lahko v grobem razdelijo v dve vrsti:

- službena in predstavitvena vozila ter
- vozila na izposojo.

Obstoječi proces prodaje rabljenih vozil v preučevani organizaciji opišem z vidika naslednjih podprocesov. Pri vsakem izpostavim najdene slabosti:

- kreiranje vozila v informacijskem sistemu,
- cenitev vozila,
- prodaja in
- administracija.

Celotni proces je podprt z MS Access bazo podatkov. Slabost orodja je, da ne omogoča večjemu številu uporabnikov hkratnega dela. Orodje tudi ni sprejemljivo z vidika zaščite podatkov, ki jih je postavil proizvajalec.

Kreiranje vozila v informacijskem sistemu - vozilo se avtomatično kreira v orodju, ko so izpolnjeni naslednji pogoji:

- vozilo je vrnjeno,
- ocena škode je opravljena,
- vsi potrebni dokumenti so urejeni in na razpolago ter
- če je vozilo bilo na izposojo, tudi dogovor o plačilu nastale škode in ceno odkupa.

Te podatke vnesejo ločeno v posamezne Excel tabele, ki so shranjene na strežniku, zunanji pogodbeni partnerji ali sodelavci iz drugih oddelkov. Ko je vozilo ustrezno označeno v vseh tabelah se vozilo kreira v MS Access bazi podatkov. Če je zapis podatka v napačnem formatu, se vozilo ne kreira.

Cenitev vozila – se opravi v MS Excel programu, kjer se pri ceni upošteva:

- cena novega vozila,
- prevoženi kilometri,
- starost,
- dodatna oprema,
- škoda na vozilu,
- zastavljena marža in
- pretekle dosežene cene.

To predlagano ceno morata potem potrditi dva vodstvena delavca v oddelku. Če je vozilo dalj časa na zalogi in ni prodano, se lahko vozilo ponovno oceni.

Prodaja - trenutno se vsa vozila ponujajo pooblaščenim trgovcem preko lokalno razvitega iskalnika rabljenih vozil. V nekaterih primerih lahko področni vodja prodaje ponudi vozila tudi direktno izbranemu trgovcu.

Administracija – ko je vozilo prodano, je potrebno preveriti, če ima trgovec proste kreditne linije, izstaviti račun, prenesti lastništvo na trgovca, poslati dokumente in prepeljati vozilo. Vsi našteti postopki trenutno niso vključeni v proces.

Kontrola procesa poteka preko rednih poročil, ki jih pripravijo zaposleni. Ker vsi podporcesi niso vključena v proces, je nekatere podatke nemogoče spremljati. Poročila tudi niso standardizirana, kar predstavlja dodatno delo za zaposlene.

Po podrobnem prikazu obstoječega procesa izpostavim ključne pomanjkljivosti procesa in predlagam izboljšave procesa. Celotnega bodočega procesa ne opišem do potankosti, ampak le izpostavim ključne izboljšave. Te izboljšave so:

- razširitev procesa,
- vključitev vseh zunanjih pogodbenih izvajalcev in zaposlenih v drugih oddelkih v proces,
- nove prodajne poti in cenovna politika,
- vpeljava novega informacijskega sistema in
- standardizacija in avtomatizacijo poročil

Razširitev procesa – trenutni proces ne omogoča kontrole nad uporabo vozila in vsemi koraki, ki so potrebni po vrnitvi. Tako je potrebno razširiti trenutni proces, da bo vključeval naslednja podprocesa:

- nadzor nad vozili v uporabi in
- nadzor nad vrnitvijo in pripravo vozil na prodajo,

Tako razširjen process omogoča zaposlenim boljši nadzor nad vozilom v času uporabe in izboljša planiranje poslovanja, ter omogoča nadzor nad zunanjimi izvajalci, ki pripravijo vozilo na prodajo.

Nove prodajne poti in cenovna politika – nove prodajne poti omogočajo doseganje višjih bodočih prodajnih ciljev ter zvišujejo in stabilizirajo prodajne cene. Nove prodajne poti vključujejo:

- trgovsko mrežo,
- končne stranke,
- dražbe (virtualne ali fizične) ki so lahko:
  - zaprte in
  - odprte (lokalne ali mednarodne);
- paketno prodajo in
- prodajo na odpoklic.

Ker te nove prodajne poti zahtevajo drugačno cenovno politiko, je potrebno spremeniti tudi podproces cenitve vozil, ki mora po novem upoštevati različne cene za posamezne prodajne poti.

Vpeljava novega informacijskega sistema – ker nadgradnja obstoječega sistema ni možna, je potrebno obstoječi sistem zamenjati z novim. Novi sistem mora tako med drugim omogočiti vključitev pogodbenih izvajalcev v proces, ter hkratno vnašanje podatkov večjega števila uporabnikov.

Standardizacija in avtomatizacija poročil – vpeljava novega sistema omogoča vzdrževanje večjega števila relevantnih podatkov. Ker so ti podatki v standardni obliki ter vedno na voljo, je potrebno pripraviti standardizirana in avtomatizirana poročila, ki bodo omogočala vpogled v proces v kateremkoli trenutku.

Po analizi obstoječega stanja in pripravi predloga izboljšav pripravim izračun potencialnih prihrankov na stroških, ki nastanejo v procesu. Izboljšan podproces vrnitve in priprave vozila na prodajo, bi po oceni skrajšal dneve zaloge za približno 40 dni. Upoštevajoč povprečne stroške zaloge v višini 20 € dnevno, to pomeni prihranek v višini 800 € po vozilu.

Tudi predlagane nove prodajne poti bodo uspešno znižale čas na zalogi. Ob upoštevanju povprečnega znižanja časa zaloge za 50 dni, pridemo do dodatnega prihranka 1.000 € po vozilu. Ker je število vozil v procesu občutno višje od preučevanega in ker so prihranki možni tudi na drugih področjih, so potencialni prihranki izjemno visoki in se merijo v miljonih evrov.

Zaključek

Proučevanje različnih virov in primerjava obravnave poslovnih procesov mi je omogočila boljši vpogled v optimiziranje poslovnih procesov v praksi. Pridobljeno znanje sem tako uspešno uporabil pri projektu optimizacije poslovnega procesa predstavljenem v diplomski nalogi in ga bom uporabljal v nadaljnji poklicni poti.

Zanimivo je, da obstaja velika razlika med teorijami optimizacije poslovnih procesov in poimenovanjem metod. Zavedam se, da so se metode razvijale v daljšem časovnem obdobju, ampak sem vseeno pričakoval, da bom v literaturi našel skupno razumevanje metod, čeprav predstavljene od različnih avtorjev.

Zaradi tega daljšega obdobja razvoja metod je zanimivo, kako starejši avtorji ne izpostavljajo pomena informatizacije ali avtomatizacije procesov, saj je bila takrat informacijska tehnologija še v povojih, zaposleni pa ne bi znali uporabljati računalnikov, tudi če bi se organizacija odločila, da vpelje informatizacijo procesov. Dandanes znajo skoraj vsi uporabljati računalnike, kar omogoča enostavno priključitev kupcev in dobaviteljev v proces, tudi po zaslugi interneta, ki pred 20 leti še ni obstajal.

Po drugi strani, pa je bilo zelo uporabno spoznati različne pristope k optimizaciji poslovnega procesa, saj predvidevam, da jih bom zelo verjetno potreboval, ko bom soočen z različnimi projekti optimizacije v prihodnji karieri.

Pridobljeno teoretično znanje mi je omogočilo boljše razumevanje obstoječega procesa in tudi boljšo oceno in pripravo bodočega procesa. Del optimizacije procesa je tudi njegova vpeljava v organizacijo, kar pa mnogi avtorji optimizacije poslovnih procesov ne izpostavljajo. Razlago sem našel v literaturi pod imenom management sprememb oziroma ravnanje s spremembami, a je zaradi omejitve diplomskega dela nisem mogel podrobneje predstaviti.

Tekom projekta optimizacije sem spoznal, da ni le pomembno narediti nov izboljšan proces, ampak ga tudi vpeljati v organizacijo. Izkušnje mi pravijo, da je to težji del optimizacije procesa. Pri uveljavi predstavljenega procesa v organizacijo sem se soočil z mnogimi težavami. Ko se bom v prihodnje soočil s projektom optimizacije procesa, se bom že od samega začetka bolj osredotočil na implementacijo procesa v organizaciji.

Ker sem se v diplomskem delu osredotočil na reinženiring procesa, nisem posebej izpostavljal sprotnih izboljšav procesa, kar sledi v organizaciji sedaj, ko je nov proces vpeljan. Ker je bila moja naloga na projektu le reinženering procesa, mora vse nadalje korake opraviti organizacija sama. Klub temu sem že tekom projekta pripravil potrebne zahteve za spremembe informacijskega sisteme in podrobno opisal, kako naj bi spremenjen sistem deloval. Ampak skrb, da se spremembe uresničijo in vpeljejo v organizacijo je od sedaj naprej v rokah oddelka prodaje rabljenih vozil. Glede na visoko delovno obremenitev zaposlenih predvidevam, da bodo tudi v prihodnje potrebovali zunanjo pomoč pri zadanih nalogah.

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APPENDIXES

TABLE OF APPENDIXES:

Appendix A. A list of frequently used abbreviations

ASM – Area sales manager
DPMT – Department
ICS – Indor communication systems
KPI – Key performance indicator
NC – New car
NFC – National finance company
NSC – National sales company
OCS_ Outdoor communication systems
OEM – Original equipment manufacturer
OSC – Ownership change
OU – Own used
RfS – Ready for sales
RMKT – Remarketing
UC – Used car

Appendix B. TO-BE UC RMKT process chart