

UNIVERSITY OF LJUBLJANA
SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

**BUSINESS PROCESS REENGINEERING IN THE SELECTED
COMPANY**

AUTHORSHIP STATEMENT

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LIST OF ABBREVIATIONS

BPM – Business Process Management

BPR – Business Process Reengineering

KPIs – Key Performance Indicators

IT – Information Technology

BPMo – Business Process Modelling

BPA – Business Process Analysis

BPMN – Business Process Modelling Notation

BPMS – Business Process Modelling System

UML – Unified Modelling Language

GDPR – General Data Protection Regulation

HoReCa – Hotels Restaurants Cafes

INTRODUCTION

In the introduction chapter I describe the challenges and obstacles that are to be resolved in the thesis and define the area of research. Then I will set purpose and goals of the thesis and what is set to be achieved with analysis and research. I will conclude the chapter with the explanation of the research methodology to be used in the thesis.

Description of the research problem and defining the research area

Business processes are a set of business activities combined with the goal of creating value for a specific customer or market (Andersen, 2010). Value for companies is created by constant improvement of processes and their basic elements. The basic elements of business processes usually include goals, available resources, activities, indicators, customer focus and facilities. These are implemented by business process modelling (BPMo), business process execution and business process performance measurement (Eisner, 2020). Business processes also require management. In business process management (BPM), companies need to focus on the following aspects: strategic alignment, governance, methods, information technology, people, and culture (Rosemann & Brocke, 2010).

BPM is of extreme importance for companies, as it enables continuous improvement of business processes based on the measurements of the performance results of the already existing processes. Well-defined business processes speed up work, increase internal order, reduce costs and provide support to the company by increasing the quality of their products/services and organization's overall action and knowledge (Reisig, 2005).

Every organization consists of business processes crucial for making and maintaining a successful and prosperous organization and its entities. These processes are present within the organization itself from the very beginning and can be further divided into business activities. Each business activity is part of a process which determines the sequence of its performance or positioning within a broader, organizational system (Rosemann & Uthmann, 2000).

While the organization performs a substantial number of business activities in various parts of the company and at different hierarchical levels, it is possible to acknowledge the existence of several business processes that, in some way, determine the organization itself. These processes can determine the pace of the organization, which also imply an importance of time management. Creation of large amounts of new documentation, case codes, system consent and lack of interest in the system can all be sources of potential risks in BPM (Davila, 2019).

Process orientation is a business philosophy that allows not only a vertical but also a horizontal flow of information and resources necessary to achieve organizational goals (McCormack, 2001). It takes a look at the organization from a customer perspective, which is crucial in adding value to a company. Process orientation focuses on the activities within an organization or between organizations that create added value located on the links between activities contained within business processes. It is characterized by the connection and coordination of the different parts of the company into an interdependent whole, which takes into account the role of each activity and its impact on the entire company (Benedict et al., 2019).

The business process is defined as a structured and measured set of activities designed to produce a specific impact for a specific client or market, with an emphasis on the way that work is done within the organization rather than on the product (Davenport, 1993). Thus, the process with its own beginning and end represents a specific order of work activities in time and space. According to Davenport (1993), the process must have clearly defined boundaries - input and output - consisting of smaller activities defined in time and space. There must also be a recipient of the output – i.e., a client who has added value from the transformation process. Similarly, Rummler and Brache (1995) use a definition that emphasizes the relationship with external customers. However, they regard the business process as a series of steps designed to produce a product or service. Consequently, processes can be of two types: primary processes visible to the client as well as support processes invisible to the client, making them a key factor in effective business management.

An organization can achieve effectiveness through Business Process Reengineering (BPR), which is defined as a radical redesign and fundamental rethinking of business processes to achieve substantial improvements regarding essential measurable performances such as cost, quality, service, and speed (White, 2019). The principles of BPR tell us that it should consider the existing assumptions given that the key question for redesign is whether a certain activity is necessary. BPR is also customer-oriented, with customer satisfaction as its value. However, the primary goal of BPR is to make dramatic improvements in business processes (White, 2019).

Processes can be modelled with the purpose of their optimization (Rosemann, Recker, & Flender, 2008). It is a combination of several different steps, which include process mapping of the AS-IS process stage, using symbols to visually describe the workflow, process detection (defining each part of the process, process simulation) and activities within the process. AS-IS process models are used to assess effectiveness (financial sustainability and cost-effectiveness) and efficiency (optimal use of resources) of the processes, in order to improve them. Suggestions for improved processes are modelled in the TO-BE phase, which is based on process analysis, introduction of corrective actions and a plan of reengineering the processes (Jahangirian et al., 2011). The literature shows that the benefits and significant results of BPR are visible after the application of TO-BE models into various segments of business processes. Therefore, it is

crucial for a company to implement suggested improvements for its better prosperity, productivity and profit maximization (Jahangirian, et al., 2011).

The company, discussed in this study, is a mid-sized company with approximately 50 employees. The company deals mostly with the management of different catering facilities and it operates in different restaurants and bars. The business processes in this particular company are outdated and the company wants to reinvent their business processes to achieve better general efficiency of the company's processes, reduce costs, minimize the time needed to accomplish specific tasks, improve customer service, identify potential weaknesses in the workflow and eliminate the potential bottlenecks. The research area will therefore be in the area of business processes, from its observation, mapping, analysis, improvements to defining and reinventing the ways the company is performing in different areas today.

Purpose and goals of the research

The purpose of master's thesis is to provide an insight into BPR and propose improvements of the currently established business processes in the chosen company, in order to optimize its business performance.

To achieve this, I will first explore existing modelling techniques and renovation approaches. Then, I will identify the existing business processes taking place at this particular company and analyze them in order to evaluate their current efficiency. Next, I will select specific processes that need to be re-engineered. Based on the literature review and the chosen modelling techniques, I will prepare the AS-IS process models. Then, I will analyze the existing processes and prepare TO-BE process models as well as an action plan to implement the proposed improvements of the business processes into the day-to-day business at the selected company. Through the method of BPR the company will renovate its processes and activities, in order to become more effective, futuristic and progressive in both setting and achieving its' goals.

Taking into consideration everything mentioned above, the goals of my Master's thesis are:

- presentation of the benefits of BPR for companies,
- identification and presentation of existing BPMo approaches and techniques,
- identification of the business processes within the selected company that need to be redesigned,
- preparation of AS-IS models of business processes in the selected company,
- preparation of TO-BE models of business processes in the selected company,
- preparation of suggestions for implementation of TO-BE business processes in the selected company.

Research methodology

In the theoretical part, I will conduct an insightful and extensive research about the business processes and topics related to BPR. By applying a critical approach in reviewing the scientific and professional literature, I will analyze different BPM approaches and techniques in various environments and situations. In my research, I will mostly use primary sources, especially scientific papers from internationally recognized scientific journals. I will also use resources from databases available at the Central Economics Library. Based on a critical literature review and method of comparison, I will select the most appropriate approach to be used for BPMo in the selected company.

The empirical part will include an analysis of the business processes in the selected company, which will be based on the knowledge and practices from the literature, and the interviews with the company's board and department leaders. Bizagi Modeler will be used to prepare and analyze the AS-IS process models. Based on the literature review, workshops with the process' owners and good practices, I will synthesize the insights into the TO-BE process models and provide suggestions for their further implementation into the selected company.

1 BUSINESS PROCES REENGINEERING

Business process reengineering is a radical redesign of business processes to dramatically improve them. It is an area of extreme importance for business improving and achieving better results for the company across different areas. Radical redesign means starting from scratch instead of changing or modifying existing ways of working. It starts with a clean sheet of paper. A business process is a group of activities that create value for the user. Making an order, for example, is a process that consists of many activities, from ordering to delivery. I consider a dramatic improvement to be a jump in performance - a tenfold increase in productivity or a sixty percent reduction in the length of the process (Johnston, 2017).

In this chapter I will present the fundamentals of business processes and its reengineering. These are followed by relationships between them, its history and connection to IT. Afterwards the focus will shift to improvements in general, then importance of process modelling, its benefits, analysis and the BPMo notation.

1.1 Definition of Business processes

A business process is a set of related tasks that find their end in providing a service or product to a client. A business process is defined as a combination of tasks and activities that, upon completion, will fulfill and complete an organizational goal. The process must include clearly

defined inputs and one output. These inputs consist of all factors that contribute (directly or indirectly) to the added value of a service or product. These factors can be classified into management (managerial) processes, operational (fundamental) processes and accompanying (support) business processes (van der Aalst, Desel, & Oberweis, 2003).

Management processes regulate the operation of a particular organization's system. Operational processes are the core business. In order to establish core business processes, supported processes such as human resources and accounting are established. The definition of the term business process and the development of this definition since its creation by Adam Smith in 1776 have led to areas of study such as the development of operations, operations management and the development of various business management systems. These systems, in turn, have created the BPM software industry, which seeks to automate process management by connecting different process participants through technology (Gamar & Agrawal, 2016).

The process requires a series of actions to achieve a specific goal. BPM programs are continuous, but allow for ad-hoc action. Processes can be simple or complex based on the number of steps, the number of systems involved, and so on. They can be short or long. Longer processes have multiple dependencies and higher documentation requirements.

However, a business process needs to be distinguished from a workflow. Workflow is simpler than business process. While the business process encompasses a number of related activities that span different departments and involve multiple workflows, participants, and phases, the workflow deals with how individual processes are coordinated. That is, which tasks, information or documents are passed from one participant to another in accordance with a set of procedural rules. Depending on the organization, industry and nature of work, business processes are often broken down into different categories (Jahangirian, et al., 2011).

1.1.1 Process as a universally applicable term

Processes represent the basic building blocks of the concept of process orientation. As a synonym for performing various activities, process is a universally applicable term. It can be used in all areas of business and private life. Although every human activity, whether private or business, can be called a process, among those present in the business environment, it is necessary to distinguish between three categories of organizational processes (Boutros & Cardella, 2016):

- work or business processes,
- behavioural processes,
- change processes.

Each category includes a specific type of process with specific characteristics and challenges. Understanding them is extremely important for the management of business processes, because it actually determines their scope, i.e., borders. In the business world, the process memory automatically refers to production or the production process, i.e., business processes that show a sequence of activities that turns inputs into outputs. Behavioural processes as widely present patterns of behaviour and ways of behaviour or interaction and processes of change that show the sequence of events over time, are also ubiquitous, although by their nature they are intangible and difficult to measure (Purdie & Boutros, 2014).

1.1.2 Determining the business process

Considering the various definitions of the process, it is necessary to emphasize two different understandings. Business processes in a broader sense represent the core of doing business in an organization with which outputs are produced, while in a narrower sense, they are defined as a structured, analytical, cross-functional set of activities that requires continuous improvement. The concept of the process is key to understanding and doing business within and between organizations. Namely, business processes clearly show the way work is done. They determine not only the course of work, but also emphasize the necessary connection of different organizational units. Processes are a kind of mechanism that connects and combines different functional capabilities to create value for the organization and its customers. (Benedict, et al., 2019)

Processes definition and process approach in general is particularly useful if business processes are established at a strategic level and from a customer perspective. When business processes are established at the operational level, they often begin and end within functional organizational units. Otherwise, business processes cross-function through the organization. This means that they have much wider horizontal coverage than business functions, because they often extend through several business functions, although, on the other hand, they usually have narrower vertical coverage because they do not go equally deep (Service, 2021).

Comparisons and relationships with similar concepts

In order to better understand the very concept of process, it is necessary to compare it with similar concepts. The comparison between process and project is interesting. Despite the fact that these mentioned concepts are often identified as similar or the same, the application of project management to processes and vice versa is very inefficient. Although the approaches of both processes and projects to team work are very similar, the main difference is represented in

the time dimension as well as the nature of the output and the way the tasks are divided (Susanto, Leu, & Chen, 2019).

It is also useful to clarify the relationship between processes and products or services. Products and services are a by-product of proverbial processes. In certain ways, processes can be understood as products. While good processes do not create winners, winners create good processes. Also, processes should be distinguished from the concepts of procedure and function. The procedure describes what needs to be done in a particular situation, and the functions are the parts of the organization that are assigned certain responsibilities. When defining the process, it is necessary to keep in mind that each business process consists of five key elements: customer, set of activities, inputs (resources) and outputs (products and services), people and technologies (Sbaï, Missaoui, Barkaoui, & Ben Ayed, 2010).

The main purpose of the process is to meet the needs of customers, where customers can be classified into several categories (Sbaï, Missaoui, Barkaoui, & Ben Ayed, 2010):

- primary customers, who receive primary output,
- secondary customers, who are out of the process and receive secondary output,
- indirect customers, who do not receive the primary output, but are next in line, so they will be damaged if the output is late or defective in any sense,
- external customers, who are outside the company and who receive the output of the process including distributors, agents, sellers, etc.,
- indirect external customers, who represent end customers in stores.

Business processes are a set of activities performed by people or machines. Activities are actually actions that are performed on inputs in order to ultimately obtain outputs. This means that inputs and outputs determine the boundaries of the process. Inputs represent all the means and resources that go into the process, while outputs are the result of the process and represent transformed inputs that as such represent value to customers. Although processes are increasingly automated today, people play a key role in their execution. Simple processes can be performed by individuals through simple follow-up of procedure (Sharp & McDermott, 2009).

A key element of business processes is certainly a technology. Due to technological advances, today it is unthinkable to perform most business activities without applying the right technology. In addition to the above elements, in order to successfully define the process, it is necessary to know its characteristics. As the basic characteristics of each business process, it is possible to state the following: each process has its goal, each process has its owner, each process has its beginning and end, inputs enter and outputs exit, each process has its customers, the process is composed of the set of cross-functional activities, the process is complex and dynamic in nature,

each process is repetitive, each process can be automated to some extent, the success of each business process is measurable and each process can be improved (Sharp & McDermott, 2009).

1.1.3 Types of business processes

The nature of business processes can be understood not only through knowledge of their function, key elements and characteristics or terminology, but also through distinguishing their different types. Business processes can be categorized according to different principles. Although there are many divisions, it is important to highlight three elementary dimensions on the basis of which and within which are the processes, that will perform a particular set of cross-functional activities such as: the position and direction of the process, the nature of the process and the value of the process are (Fanbo, Minli, & Wuliang, 2010).

Although the categorization of business processes in the literature is diverse, the generally accepted division is into: management, core and support processes. Management processes are long-term oriented and look at the bigger picture. They are used to implement the strategy and manage the success of the company. Management processes also take into account business opportunities and threats and, although they do not generate revenue directly, they optimize revenue generation and ensure the continued survival of the business as a whole. For example, the strategic management process will explain how and which strategic documents are needed to implement proper organization management. (Jeston, 2018)

Core processes are directly involved in value creation and revenue generation. They are large in size, should be in the service of improvement and often involve the cooperation of different teams. Examples of core processes are: marketing, sales and complaint management. Supporting processes do not generate revenue directly, but enable the smooth execution of management and core processes. Processes such as human resource management or IT support provide the foundation on which a company thrives and runs its core business. (Jeston, 2018)

Despite the large number of options, today the most accepted division of business processes (like introduced in the first chapter) is the one that recognizes the following three types of business processes:

- managerial or steering processes,
- fundamental, key or operational processes,
- support, enabling or administrative processes (Fanbo, Minli, & Wuliang, 2010).

Managerial or steering processes, as the name suggests, serve to guide and manage the company. They are most often performed by top-level managers in order to set organizational goals, develop and implement a strategy in order to achieve previously set goals, determine and shape

the organizational structure and manage business performance. Managerial processes measure, monitor and control activities related to business procedures and systems. Examples of management processes include internal communication, management, strategic planning, budgeting, and infrastructure or capacity management. Like support processes, management processes do not provide value directly to customers. In addition to the above, they also include the processes of development, securing and allocating resources, communication and strategic decision-making (Fanbo, Minli, & Wuliang, 2010).

Key, fundamental or operational processes reflect the unique competencies of the company and are critical to its mission. These are "visible" processes that begin and end with external customers, and which are directly involved in the creation of products and or services. They deal with the company's core business and value chain. These processes deliver value to the customer by helping to produce products or services. Operational processes are the key business activities. They achieve business goals, e.g., revenue generation. Some examples of this include downloading customer accounts and bank account management. According to their volume, they are large and connect multiple organizational units and parts of the company. Because they create the greatest value, not only for customers but for the organization as a whole, they should be first in the line, when focusing on business improvement (Fanbo, Minli, & Wuliang, 2010).

Supporting, enabling or administrative processes exist to support the business of the company and to enable the smooth running of management and key business processes. They are aimed at creating satisfaction of employees or customers (users) within the organization, although indirectly, they also provide added value to external customers. Support processes support core processes and functions within the organization. Examples of support or management processes include accounting, human resource management, and workplace safety. The key difference between operational and support processes is that support processes do not provide value to customers directly. As the needs of business organizations for support functions are similar, support processes are fairly standardized and include technology support, human resource management, accounting and other forms of support (Fanbo, Minli, & Wuliang, 2010).

Complexity of business processes

The number of business processes within an organization is closely related to their complexity. The greater the number of activities, the more complex and difficult the process to organize. The complexity of business processes, as well as the complexity of the organization, can be observed through the vertical and horizontal dimensions. The vertical complexity of business processes is closely related to the process hierarchy and the way in which higher-level processes are broken down into lower-level processes, while the horizontal complexity refers to process integration, i.e., the degree of connection of different business processes (Radhakrishnan & Balasubramanian, 2008).

By observing business processes, just like the organizational structure of a company, the existence of higher and lower order elements can be applied. While organizational units differ, for example, strategic business units, divisions, business functions, departments and divisions, the process elements of organization extend from global processes, through groups of processes, processes, subprocesses and activities to tasks and steps, i.e., they are part of process hierarchy. The level of detail or the level of analysis represents the end point of observation of a particular business activity within the organization. It presupposes the division of a certain object into elementary parts, but it also implies the grouping of those same elementary parts into higher-order objects (Radhakrishnan & Balasubramanian, 2008).

The decimal numbering system is a technique that distinguishes between processes and subprocesses contained within the former. Thus, in large and more complex organizations, a group of processes can be marked with the label 1, and all the processes that make it up with the label 1.1., 1.2., 1.3., etc. It is important to emphasize that there are no technical limitations to the analysis of business processes. Moreover, it is common to divide business processes into three or four levels (Radhakrishnan & Balasubramanian, 2008).

1.1.4 Roles and departments

Position, role in the company is not set into the stone and is not a decisive factor in determining occupation. Position in employment refers to the position of an economically active person in relation to employment, i.e., whether and how is an individual employed (which activities does he or she performs) as an employer, self-employed person, employee or unpaid member of the family, during the observation period determined for the data on economic characteristics. The owner of a company, for instance, who performs the duties of a director by profession is a director, as is the owner who is not the owner of the company, and performs the duties of a director, therefore they are both in a role of a director in such example (Landau, 2018).

Role is by definition determined by the work that someone is doing, has done, or will do. From the answers of the respondents, it can be concluded on the basis of jobs and other data about the profession in question. A description of the role can help with the classification of user roles, according to which the group in which the jobs obtained in the answer are located will be determined. In this way, current, past or future roles can be determined. Future role is also determined by the education in which the candidate is involved (Biazzo, 2002).

In practice, many difficulties can be encountered in determining roles. It happens that the jobs and tasks that someone performs are made up of jobs of several different occupations. This is often the case in companies with a smaller number of employees. In that case, the role is determined according to the principle of predominance. The role of such persons will be determined by the jobs most often performed (Linn & Werth, 2017).

In all branches of industry, and in some other industries, there are jobs (roles) of controllers with different complexity of jobs. These jobs are not envisaged as independent occupations of the controller, but are combined with other jobs and tasks in the basic occupations of these types of work. The jobs of supervising engineers and project auditors are not defined as special roles because they perform the same type of work as supervising engineers or designers whose projects are audited (Biazzo, 2002).

Processes can also be defined to have owners, custodians (managers) and performers (practitioners). Process owner is an individual that is responsible or accountable for the process, meaning he or she is the one to ensure the clarification, design and documentation of the process. Custodian is the one to ensure that procedures and process activities are carried out on a daily and weekly basis, they are also the ones to have supervision over performers. Performer is a role, where person or a team carries out the activities, they have been assigned to. (Ross & Wise, 2015)

Roles in analysed processes are therefore not job titles, they are just one of many roles that an individual performs as a part of its job. For instance, someone, who is employed as a waiter can perform jobs of data preparations, i.e., in a role of a data analyst for either a period of time or as a continuous, repetitive activity compared with his everyday activities performed in the process of Provision of services. There are some key points for a process role that include the following (Boutros & Cardella, 2016):

- label for a participant in a specific activity is called a role,
- with roles the processes are simplified,
- there is no need in referring to specific examples and cases,
- job title spread across the company cannot be equalled with a role,
- same role can be consisted of more tasks,
- in general, for each process and activity role is assigned to different person,
- it is mostly and usually assigned to an individual for each case,
- a single employee can have different roles across different activities and processes.

1.2 Business Process Reengineering

BPR refers to the thorough rethinking and radical redesign of a business process to achieve dramatic and lasting improvements in quality, cost, service, delivery time and innovation. BPR concentrates on the whole process - from the product concept phase to the design of the final product. It provides an opportunity to completely change the business process and to radically reduce the number of activities required to carry out the process with the help of advanced tools

and methods. A group of related tasks that together, among other things, create value for the customer is called a business process (White, 2019).

The key words for BPR are "fundamental", "radical", "dramatic", "change" and "process". The business process must undergo fundamental changes to improve productivity and quality. Radical changes, unlike incremental changes, are made to create dramatic improvements. Reengineering is not about fine-tuning or marginal change. It is about ambitious companies that are willing to make a significant amount of change to achieve significant performance improvements. BPR is most commonly used to increase productivity, reduce costs, improve customer support, and gain a competitive advantage (White, 2019).

1.2.1 Defining the BPR

BPR is a business management strategy, originating from the early 1990s, focusing on the analysis and design of workflows and business processes within an organization. BPR is aimed to help organizations thoroughly rethink how they do their jobs to improve customer service, cut operating costs, and become world-class competitors (Damelio, 2011).

BPR aims to help entities, individuals and companies completely improve and restructure their organizations by keeping focus on the fundamental design of their business processes. According to early BPR advocate Thomas H. Davenport (1990), a business process is a set of logically related tasks performed to achieve a defined business outcome. Reengineering emphasized a holistic focus on business goals and the way processes are related to them, encouraging holistic process recreation rather than iterative subprocess optimization (Boutros, 2017).

Paying attention to business processes reached its peak in the early 1990s with the advent of BPR. It is a managerial philosophy, which represents a thorough rethinking and radical redesign of business processes to achieve dramatic improvements in critical modern measures of success, such as cost, quality, service and speed (Boutros, 2017).

BPR can also be defined as the design of completely new and efficient business processes, independent of previous practice. The philosophy of BPR is characterized by four basic words: thorough, radical, dramatic and processes. Their goal was to radically improve productivity between 70% and up to 95%. Accordingly, this philosophy involved rethinking the logic of existing business processes and often required starting with a blank paper and, in many ways, with an empty mind or at least a pure mind, capable of thinking beyond and limiting existing systems or assumptions (Boutros, 2017).

Reengineering was most often conducted from top to bottom and was focused on cross-functional processes. It was based on the application of information technology, which significantly distinguished it from previous development approaches. Due to its specificity and potentially great benefits, it has attracted a lot of attention in the business world, so that in 1993 more than 66% of American companies applied some form of BPR, while in 1995 its application peaked and was present in as many as 78% of the surveyed companies. Although reengineering became extremely popular in a very short period of time, it was soon realized that this was another managerial fallacy. Namely, more than 50% of BPR projects in the USA and about 70% of projects in Europe ended in failure (Boutros, 2017).

BPR is also known as business process redesign, business transformation, or business process change management. BPR is the practice of reviewing and redesigning the way it works to better support the organization of missions and reduce costs. Organizations are reengineering two key areas of their business. First, they use modern technology to improve data dissemination and decision-making processes. Then, they change functional organizations to form functional teams (Susanto, Leu, & Chen, 2019).

Reengineering begins with an assessment of the organization's mission, strategic goals, and high-level customer needs. Basic questions are asked, such as "Should our mission be redefined? Are our strategic goals aligned with our mission? Who are our customers?" An organization may find that it is acting on questionable assumptions, particularly with respect to the wishes and needs of its customers. Only after the organization reconsiders what should it do does it decide how best to do it (Petrozzo & Stepper, 2003).

Within this basic assessment of mission and goals, reengineering focuses on an organization's business processes - steps and procedures that govern the way resources are used to create products and services that meet the needs of specific customers or markets. As a structured sequence of work steps by time and place, a business process can be broken down into specific activities, measured, modeled, and improved. It can also be completely redesigned or completely eliminated. Reengineering identifies, analyzes, and redesigns an organization's core business processes with the goal of achieving improvements in critical performance measures, such as cost, quality, service, and speed (Grover, Jeong, Kettinger, & Teng, 1995).

Reengineering uncovers that the organization of business processes can be further allocated to subprocesses and tasks. No one is often responsible for the overall performance of the entire process. Reengineering argues that optimizing subprocess performance can result in certain benefits, but cannot bring improvements if the process itself is fundamentally inefficient and outdated. For this reason, reengineering focuses on redesigning the process as a whole to achieve the greatest possible benefits for the organization and its customers. This drive for improvement by rethinking and remaking the way an organization's work should be done to the fundamentals,

differs reengineering from efforts to improve processes based and focusing on functional or gradual improvement (Susanto, Leu, & Chen, 2019).

1.2.2 Meaning and history of BPR

BPR involves reviewing and redesigning a company's core business processes, systems and structures to increase customer value. The intensive process of change management, the introduction of BPR indicates that the company is radically moving away from stagnant business methods, in part by introducing new technologies, in an attempt to accelerate and significantly improve customer service (Jahangirian, et al., 2011).

BPR requires companies to refocus their efforts on serving customer needs. Armed with a deep understanding of the company's target customers, BPR allows the company to examine the state of its business, its underlying assumptions and identify ways to eliminate inefficiencies in activities to increase quality, production time and customer value (Sharp & McDermott, 2009).

Common mechanisms for creating greater operational efficiency through BPR include adopting new technologies that simplify business processes, creating multifunctional structures that increase communication and accountability, and placing the right people in the right roles for effective execution (Sharp & McDermott, 2009).

The concept of reengineering comes from theories developed as early as the nineteenth century. The purpose of reengineering is to make all processes as good as possible. American efficiency engineer Frederick Winslow Taylor (1856-1915) suggested in the 1880s that managers could discover the best processes for doing business and restart them to optimize productivity. BPR supports the belief that there is one best way to perform tasks. In Taylor's time, technology was not enough to allow large companies to design processes that work in different ways or across different departments (Hammer & Champy, 1993).

Reengineering became popular in the early 1990s although methodology and approach were not fully understood or appreciated. Also in the early 1990s, Michael Hammer and James Champy published a book, *Reengineering the Corporation*, which stated that in some cases radical redesign and reorganization within the company was the only way to reduce costs and improve service quality. To that end, they said, information technology was a key element that made it happen. In the 21st century, it has become an effective tool for organizations that strive to operate as efficiently as possible. Much attention is paid to "best practices" resulting from reengineering strategies. Hammer and Champy (1993) said most large companies made (now invalid) assumptions about their goals, people and technology that influenced the workflow. They suggested seven principles that could be used to redesign and help simplify workflows, thus improving quality, time management and costs.

Hammer and Champy proposed the following seven principles (Hammer & Champy, 1993):

- organize around results, not tasks,
- identify all processes in the organization and prioritize them in the order of redesign,
- integrate the information processing business into the real information-producing business,
- treat geographically dispersed resources as if they were centralized,
- link parallel activities in the course of work instead of just integrating their results,
- put an end to the decision on which the work is being done and incorporate control into the process,
- capture information once and at source.

Basically, for successful BPR, it is important to look at all the tasks that work to achieve the same goal. This exercise can then allow you to combine several jobs into one. In addition, parallel processes leading to the same result should be linked into a process, not just a combination of results in the end (Hammer & Champy, 1993).

It is also important to review all available resources and place the actual work where it makes the most sense. For the process to be most effective, the decision-maker should be given the opportunity to the people conducting the process and all unnecessary management systems should be eliminated. Instead of having additional processes for recording process-related information, the resource within the process should provide all the necessary data to increase accuracy and reduce redundancy (Hammer & Champy, 1993; Rummler & Brache, 1995)

The following steps can help reengineering achieve the basic principles of customer satisfaction, reduced operating costs and increased competitiveness (Mohapatra, 2015):

- create a vision: before the process is reviewed or adjusted, there must be a clear picture of the reasons for the change. It is important that the customer is the focus of this vision. The objectives are to be further classified in quantitative and qualitative terms. If the goals are clear, it is important to reassure employees that change is necessary,
- choose a team: a qualified team should be formed that will initiate change and reduce the possibility of failure. It is worth establishing a diverse team because creativity is key in analysing current business processes and developing new ones. For example, the problem is viewed from different perspectives and an accurate diagnosis is formed in the following steps,
- select and understand the current process: the entire current process must be mapped to optimize. This can be done using flowcharts or software. KPIs (Key Performance Indicators) can then be linked to the relevant process in order to monitor whether the process has the desired effect. In this way, all issues that do not add value to the process can be identified.

These KPIs are compared in the next stages with the same indicators, but then for a new process,

- develop a new process: if KPIs show that the current process is inefficient or inefficient, a new process must be put together. Here the guide should be customer oriented from step one,
- implement a new process: once the development and planning of a new process has been completed, a small-scale test can be launched. Results and effects must be closely monitored with KPIs. If the new process turns out to work better than the previous one, it can be carried out on a larger scale,
- assess: in a very dynamic environment a lot changes, so sometimes indicators can give a different picture. By conducting an evaluation, inconsistencies are noticed faster and can be adequately predicted.

1.2.3 Information technology and BPR

The term reengineering first appeared in the field of information technology (IT) and evolved into a broader process of change. The goal of this approach to radical improvement is rapid and significant gains in organizational performance by redesigning the core business process. In the late twentieth century, many American companies adopted reengineering as an effective tool for implementing change to make an organization more efficient and competitive. The motivation was usually the realization that it was necessary to speed up the process, reduce the necessary resources, improve productivity and efficiency, and improve competitiveness (Fanbo, Minli, & Wuliang, 2010).

The changing economic environment has led to a growing interest in BPR by advanced companies around the world. Significant reductions in IT costs in the 1990s resulted in huge investments in IT applications that spurred increasingly complex organizational changes. Information technology has been used to break down communication barriers between corporate functions, empower line workers, and initiate BPR. In most cases, IT is used to speed up office work, not to transform it. Top managers believe that IT is a powerful source of competitive advantage (Davenport, 1993).

BPR and IT with combined works, have the possibility of creating a more team-oriented, coordinated and flexible work environment. IT is more than a set of tools for automating or mechanizing processes. It can fundamentally reshape the way I do business and enable process design. In leading cutting-edge practices, information technology makes BPR possible and valuable. BPR and IT are natural partners, but their relationship has not been fully explored (Rendle, Freudenthaler, Gantner, & Schmidt-Thieme, 2009).

1.2.4 IT capabilities and reengineering

IT penetrated the office and service environment in 1978. Switching from the mainframe to desktops breaks down communication barriers between employees and customers. Now managers and employees from various departments design and control complex business information systems. IT capabilities include improving access to information and coordination among organizational units. It is so powerful that it can actually create new possibilities for process design, not just support them (Gates, 1999).

In his book *Business at the Speed of Thought*, Bill Gates thinks the 1980s were about quality, the 1990s about reengineering, and the 2000s about speed. Gates advocates the complete digitalization of all aspects of life. He argues that companies, in order to succeed in the digital age, need to develop a new digital infrastructure similar to the human nervous system. This new digital system allows companies to work smoothly and efficiently, allows them to respond quickly to emergencies and opportunities, provides a means to quickly obtain valuable information to people in the company who need it. This in turn allows employees to make decisions and communicate with customers (Gates, 1999).

What is the relationship between BPR and information technology? Hammer and Champy believe that IT is a key driver of BPR. Davenport argues that BPR requires a broader view of both IT and business activities and the relationship between them. IT capabilities should support business processes, and business processes should be in line with the capabilities that IT can provide. They believe in the promise of information technology and that its ultimate impact will be the most powerful means of reducing coordination costs. It is said that innovative applications of IT would inevitably lead to many companies developing new structures that are intensive for coordination and allow them to coordinate their activities in ways that were not possible before. Such structures of intensive coordination can lead to strategic advantages. IT roles can be divided into three phases: before the process is designed, while the process design is ongoing and after the design is completed (Hammer & Champy, 1993; Davenport, 1993).

1.3 BPR benefits for companies

Reengineering uncovers that business process organization can be further divided into subprocesses and tasks located in different specialized functional areas within the organization. BPR is practiced at the highest level of the organization's hierarchy and is directly influenced by the direction of the organization's strategy, mission and vision. BPR's main focus is reducing costs and adding value to company processes by increasing the dissemination of data and information, minimizing resource consumption, improving decision-making processes, and streamlining business functionality (Service, 2021).

The main advantage of BPR is the identification of all processes, subprocesses, costs and labor that are not required in the organization. Not only does it highlight the shortcomings of the process, but it also shows areas where the business bears the costs without getting the required returns. BPR also provides management with an opportunity to understand their business systems in more detail. It improves communication within the company and also improves the quality of internal management reports. The BPR approach provides insight into business analysis to management, which can help future decision-making, as it presents a better picture of the strengths and weaknesses of the business capacity and ability of the company to adapt and respond to changes in the external environment (Susanto, Leu, & Chen, 2019).

This makes the business entity more proactive and a learning organization. BPR provides long-term solutions to minimize business deficiencies. The focus of the exercise is to take short-term damage control measures, but especially to launch a long-term plan that will improve the efficiency, capabilities and effectiveness of the organization (Susanto, Leu, & Chen, 2019).

Another important advantage of BPR implementation for companies is meeting customer needs and maintaining product value. However, BPR does not directly affect customer satisfaction, but provides organizations with room for improvement. As value-free costs are kept to a minimum, companies can improve the quality of products and services by inducing or shifting those costs to parts that ultimately add value to customers (Sbaï, Missaoui, Barkaoui, & Ben Ayed, 2010).

1.4 Business process modelling

BPMo and analysis is of existential importance for the success of BPM initiatives. Activities within these phases of the BPMo life cycle develop a clear definition and understanding of business processes that lead to their improvement and optimization (Sharp & McDermott, 2009).

There are two approaches to business process modelling (Sharp & McDermott, 2009):

- graphic methods (static modelling),
- dynamic modelling (simulation modelling).

Graphic modelling of business processes involves the formation of diagrams showing business activities and the sequence in which they occur. When creating a business process model, standardized graphic elements are used, which facilitates the communication of different participants in their analysis. BPMo also allows the following: defining key business processes, modelling all or some processes in detail, identifying processes that require improvement and modelling new processes before they are implemented (Sharp & McDermott, 2009).

Simulation business process modelling is a useful tool for modelling and changing business processes. Simulation allows the inclusion of random variables in the process model, experimenting with the model, and predicting the effects of changes on model performance that are characteristic of simulation modelling. In addition to the obvious advantages that the application of discrete simulation could bring in the development of proposals for improving existing processes, it also has certain disadvantages such as: long and expensive model development, complex model evaluation and experimentation. experiment is not the optimal solution, and the choice of the best solution depends on the assessment and decision of the project team members (White, 2019).

The term modelling implies the collection of sufficiently detailed data to understand business processes. It starts from defining the activities on the basis of which the subprocesses are determined. Subprocesses are then grouped into processes. Finally, by determining the interaction between processes, groups of processes are formed (Veyrat, 2015).

The methodological concept of each tool determines the project implementation process. Some methodologies require a formal, comprehensive and systematic approach to project implementation, while other methodologies focus on specific procedures to improve business processes. While some manufacturers have accepted only one methodological concept as the basis of software tools, others have offered users the ability to use different concepts. There are also those tools that do not use any methodological concept (Veyrat, 2015).

1.4.1 Process model

The process model is the most basic description of the process in the form of a diagram in which it is possible to describe one or more processes. An instance of a process is a process carried out in reality. For example, one customer complaint is an instance of the complaint process. Some processes can be instantiated only a few times a year, such as a quarterly bookkeeping report or overhauling and updating the offer, while others can be instantiated more often (for example, I can take a bank loan application) (Sharp & McDermott, 2009).

A token model can be applied if you have a process model in mind and want to know which paths within the process can or must be used during an instance process. The token travels the possible paths in the diagram. If it encounters two possible paths, a token clone is created that continues the path along the diagram parallel to the original. Each token in the diagram represents one instance of the process. To better explain what a correlation is, I will use an example: when applying, you are assigned a unique application number. The request number is a unique key that is tied specifically to that object, and it refers to the request that you submitted. It is this allocation based on an unambiguous key that is called correlation (Sharp & McDermott, 2009).

The Business Process Modelling Notation (BPMN) specification describes the symbols intended for process modelling. It also describes the many attributes that can be assigned to symbols. Many attributes do not appear in the diagram; such attributes are stored in modelling tools and are used when the process machine executes the modelled process (Veyrat, 2015).

1.4.2 Software tools

In order to establish a system for monitoring the efficiency of work in the company, it is necessary to first establish a repository of business processes of the company. Today, there are more than a hundred different tools for business process modelling on the market, and due to the great interest of companies and a large number of business process change projects, intensive work is still being done to improve existing and develop new tools (Yaqin, Sarno, & Fauzan, 2017).

The tools are expanded with additional functionalities that penetrate the BPMo system segment. It can be expected that in the future there will be an integration of business process modelling and analysis tools with BPMo tools. Business process-oriented software tools can be divided into two basic categories (Ronan, 2018):

- tools for modelling and analysing business processes,
- BPMo tools.

Although there are a relatively large number of software tools on the market that cannot be classified into either of the two categories, it is not necessary to observe them independently because such "non-classified" tools are usually an integral part, or additional module, of software tools from these categories (Ronan, 2018).

In general, it can be said that all business process modelling and analysis tools generate Business Maps (Process Maps and Activity Maps) that show events (customer order, customer payment), activities (customer order processing, invoice creation) and status (customer waiting for serving, waiting for delivery). Information (data) flows through the process and resources (people, machines, computers) participate in the processes (Madison, 2005).

The characteristics of software tools for modelling and analysis of business processes that need to be considered and evaluated in the selection process are (Madison, 2005):

- software tool architecture,
- methodological concept of the software tool,
- modelling and analysis of enterprise process / architecture,
- dynamic process analysis (simulation),

- strategic management of the organization using process models,
- modelling and development of program code / applications,
- system administration and security,
- software tool manufacturer / representative,
- total cost of software tool.

1.5 Business process modelling techniques and approaches

Business process analysis (BPA) is a method of analysis that helps increase the efficiency and effectiveness of the process. It assesses how well the process achieves its ultimate goal. BPA identifies and examines each part of the structure, including the process itself, participants, information exchange and others. Accordingly, it can help identify potential improvements in the process, facilitating reengineering initiatives in the future (Kim, Lee, & Son, 2009).

The analysis of business processes enables their better understanding, and the logical consequence of that is more efficient setting up, connecting and executing the activities that make up this particular business process. BPA finds: non-value-added activities, redundant activities, inappropriate use of technology, inappropriate rules and procedures, and finds ways to provide feedback and links between missing processes (Kim, Lee, & Son, 2009).

Necessary steps in process analysis are: defining the goal of the activity and analysing the steps of the activity, finding out whether the activity adds value or not, defining measures for the results of the activity, defining the knowledge needed to perform the activity, determining who performs the activity, define costs, resources and duration of activities and simulate the process (Reisig, 2005).

Business processes are in need to be constantly monitored. They need to be measured in order to get an answer about the effectiveness of the implemented processes. Starting from statistical process control that monitors process stability through a large number of dynamic analyzes such as simulation, what-if analysis, business cost analysis, all the way to determining the satisfaction of internal and external customers, but also process owners, employees and process suppliers. In most cases, the analysis of business process models is based on manual entry of parameters such as: execution time of certain functions, waiting time, availability of resources, frequency of occurrence of process drivers, etc (Kim, Lee, & Son, 2009).

If on the one hand the organization has a repository of business processes and on the other hand computerized business processes, it would be best to take parameters from the information system, classify them as necessary and integrate them with business process models. From a technical point of view, it is necessary to develop a component whose task will be to read data from the production database of a particular information system and copy this data into the

analytical database, ie. parameterization of business process repositories. In this way, the company's management can check at any time the state of the processes, whether they need to be changed or not (Reisig, 2005).

It would be necessary to consider a system that will not only be a classic Business Intelligence system, which will not only enable the availability of key data, but which will have the task of showing the process structure in the segment where the critical process occurs. This means not only the answer to the question of what is happening, but also to other key questions - where exactly in the business process it happens and, most importantly, why it happens, or whether there are certain media or organizational interruptions, whether there are „bottlenecks " etc. This use of the BPM system achieves active, fast and accurate monitoring of operational operations at all times with the ability to react before any errors occur (Jeston & Nelis, 2008).

As also mentioned in previous chapter it is of crucial importance to carefully inspect and choose the appropriate method and ways of performing the analysis of business process modelling techniques and approaches (Jeston & Nelis, 2008).

BPMN is based on the assumption that one or more participants may exist within one diagram. The participant is a logical element to which the following rules apply (Strembeck & Rinderle-Ma, 2013):

- each process can contain only one participant (here I mean a logical element because the process can contain several human participants),
- the participant has complete control over the process,
- the participant is fully responsible for the process he / she manages,
- other participants cannot influence the process; they may not even know how it works.

One process can look completely different for each participant, and it depends on their perspective. This results in a different process model. In BPMN, the symbol for the participant and his process is the pool; each process was assigned its own pool. Admittedly, logically, a participant can control more than one process (Strembeck & Rinderle-Ma, 2013).

1.6 Introduction to Business Process Modelling Notation

To better understand the concept of BPMN, I will first explain what BPMo is. BPMo is a systematized approach for recording, designing, executing, documenting, measuring, monitoring and controlling automated and non-automated processes in order to achieve the company's goals and business strategy. Through systematic and conscious process management, companies achieve better results faster and more flexibly (Jahangirian, et al., 2011).

Through BPMo, processes can be aligned with business strategy and thus improve performance thanks to process optimization within business departments or even outside the company. The goal is to understand, and thus improve, the whole process and not just its components (Cameron & Green, 2015).

In order to better automate the process, BPMN was developed as a graphical notation that serves to model and describes business processes. It provides standardized graphical language and facilitates communication and better understanding of business processes. I could say that BPMN is a "common language" between the business world and information technology (Jahangirian, et al., 2011).

The models provide the basis for the development of an information system to execute and support business processes. Therefore, the models need a standardized structure and should contain all the necessary information for system development. System-supported processes are increasingly controlled by BPMS (BPM System). It contains a process machine that directly controls the workflow using appropriate process models or a formal process description. For this reason, the models have to meet very strict requirements because they are not converted into a computer program by man, but are processed directly by the machine. The goal is to ensure that different process machines interpret and execute a particular model in the same way. There are various software programs that execute BPMN models. Examples of such software programs are Activiti and jBPM, which is an open-source software written in the Java programming language (van der Aalst, Desel, & Oberweis, 2003).

Other standards, such as the Activity diagram from UML (Unified Modelling Language), are not accepted as business process models in practice. Their use has remained limited to the area of object-oriented software designs where UML is the accepted standard. In the last few years, BPMN has been accepted as the leading standard for process modelling. It is also important to note that the precision, as well as the formal correctness of the process model, varies depending on the purpose of the model and the expectations of the consumer. Today, many organizations provide their management teams with trainings on BPMN and introduce BPMN as their organizational modelling standard (van der Aalst, Desel, & Oberweis, 2003).

This notation is the most common norm for business process modelling and contributes to easier understanding of modelled processes. In addition to being a standard modelling method, it consists of various rules that need to be followed when creating a model of a particular business process. The reason for the development and popularity of this standard is the fact that it was necessary to find a graphical language that will be understandable to all users and that can be applied to all types of processes. BPMN 1.0 was developed by the BPM Initiative in 2004 in association with the Facilities Management Group, leading to a standard specification document. A few years later, more precisely in 2013, the BPMN 2.0 version was officially

released, which became the most used standard for process modelling (Cameron & Green, 2015).

The new version is more advanced than the first version in various respects such as formalizing the elements of the norm, improving the properties and connections of events, expanding human relationships and interaction in the process, and there are improvements in the case of choreography and collaboration. In developing this standard, it was important that all types of business users could use and understand it such as business data analysts, programmers and business people in general to manage processes. The great advantage of this standard is that these business users can choose from a variety of available tools and can create processes at all levels from the simplest with basic elements to demanding processes with advanced relationships and elements in the process (Sharp & McDermott, 2009).

The model made, according to the BPMN standard consists of two groups of elements and these are basic and additional elements. Each element is accompanied by a symbol with which it can be recognized even without a name, and these symbols serve as additional information about the elements. When it comes to modelling, the name of the activity or event can be attached to the symbol. The name can also be added to the arrows to better explain the connection between the two elements. Depending on the situation and the detail required when making the diagram, labels can also be added to activities, events, and crossovers to know what type they refer to (OMG, 2011).

1.6.1 Basic elements

The basic elements can be grouped into several different groups for easier identification and classification. Activities, events, and gateways belong to a category called flow objects and this is the main group of elements of the modelled process. The events in this case are divided into start, intermediate and end events, and the turning point depends on whether there will be branching or merging in the process. Merge objects are used to connect flow objects and, in that case, there is association and data to be joined, sequential and information flows. The arrows show in which direction the activity or message is moving between the two participants. Fields and paths belong to the category for covering the areas in which the executors of the activities and the activities themselves are located. In addition, there is another category consisting of data, notes, and groups (Aldin & de Cesare, 2009).

Even for simpler events I have to make further distinctions. Initial events are catching events. This means that something happened regardless of the process itself, but the process must wait for that event to pass or react to it. Medium events can occur, be caused, or be triggered by the process itself. If the process starts them itself, I also call them Throwing events. Medium ordinary events indicate the status achieved by the process itself and is therefore a throwaway

event itself. Final events take place when the process no longer responds to anything. As a result, only the process can start them (Robinson, 2020).

BPMN events refer to something that has already happened regardless of the process (in the case of capture events) and the outcome of the process (in the case of throwing events). For this reason, I use [object] first and make [verb] in the passive sense so the notation in our case is: hunger noticed. In BPMN, it is not necessary to start with the initial event and end it with the final event, I can omit them. If, on the other hand, I decide to start with the initial event, I have to finish with the final one every time. Conversely, final events require an initial event. It is good practice to always start with the start and end with the end event for two reasons (van der Aalst, Desel, & Oberweis, 2003):

- in this way it is possible to determine the trigger of the process,
- the final status for each end of the road can be described.

Sequence flow describes the temporal-logical sequence of flow elements: tasks, events, gateways. The process path taken by the token is also one flow of activity. When drawing a diagram, the flow orientation is arbitrary. Admittedly, most often the orientation is horizontal and goes from left to right (van der Aalst, Desel, & Oberweis, 2003).

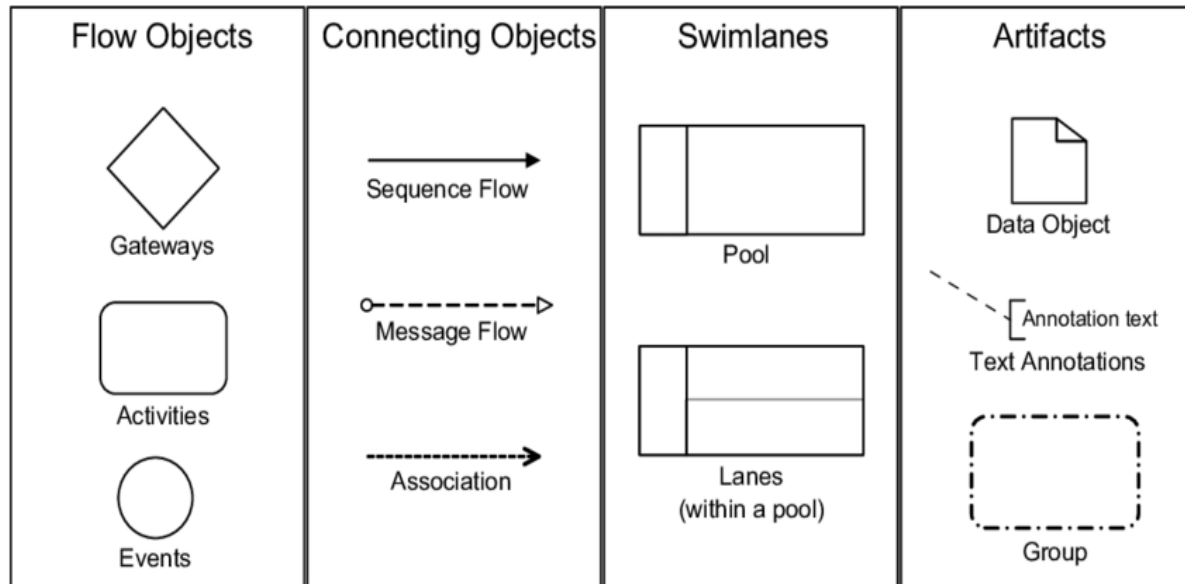
Without activities, there would be no business modelling process, and in addition to being simple and complex, activities can be divided into three types: work step, subprocess, and existing activity to call for another activity. A work step is the simplest of these three types because it is not broken down, while a subprocess is a type of activity that is further broken down into work steps. Activities are also divided in the way they are performed because they are not all performed equally. Therefore, there are repetitive, compensatory, multiple parallel and multiple sequential activities (van der Aalst, Desel, & Oberweis, 2003).

Another element that needs to be looked at further is the crossover. A crossover is an element that many try to avoid in modelling for fear of complicating and making modelling difficult. But in the real world, one should accept the fact that without switches, only extremely simple processes can be created that have a single sequence of activities without alternative pathways (Aldin & de Cesare, 2009).

However, the BPMN norm in certain situations allows modelling without crossovers, as if they were used. The first way to avoid a turnout involves parallel branching, so that two new activities emerge from the activity that preceded the turnout. In the case of exclusive branching, a similar technique is used as in the case of parallel branching, except that a small rhombus is added to each arrow exiting the original activity. It is a conditional flow and it says the condition that needs to be met in order to continue the process. In addition to parallel and exclusive branching,

the switch can also be avoided in the case of an exclusive connection, by bringing the paths that were connected to that switch directly to the activity that followed the switch (Garbacz & Kutz, 2014).

Figure 1: The BPD Core Element Set



Source: Garbacz & Kutz (2014).

1.6.2 Additional elements

In addition to the basic elements, there is a whole set of additional elements. As seen in the figure below, the additional elements consist of three groups of events. The first group of events is called 'catching' which translates as catching events and it refers to events that can result in the beginning or continuation of a process, the cancellation of a certain activity or moving through an alternative path in the process. These are events that do not happen by themselves, but react to a certain action in the process. On the other hand, 'throwing' events happen by themselves. They can happen either during the process or at the end of the same. The third group includes events that were originally used to interrupt activities and can now be used in a way that does not interrupt them (Garbacz & Kutz, 2014).

The events in the figure above represent additional elements contained in the BPMN 2.0 standard, which are used depending on the complexity of the process. In the context of simple processes, it is not necessary to use most of these elements, but the need to use them grows with increasing detail and complexity of the process. These events will be explained in order from top to bottom (Garbacz & Kutz, 2014):

Notification (message) - the letter symbol is a notification of a specific event that occurred during the process, such as that something was delivered, received, sent, and the like.

Timer - is shown by the clock symbol and refers to the event related to time, i.e. when it is necessary to indicate how much time is needed for execution of a particular task.

Error - indicates a specific error in the process that is represented by symbols flash.

Escalation - determines the situation to which the process should react.

Cancellation - this event interrupts the process.

Compensation - used in complex processes when some activities need to be canceled for various reasons.

Conditional event - serves to indicate the situation when there is a certain condition that needs to be met in order for activities in the process to continue.

Link - shown with the help of an arrow, it is mainly used in the case of large and complex processes in order to maintain visibility, which the use of classic arrows as a link can significantly collapse.

















































Signal - an event similar to a notification, but the difference is that the signal does not refer to a specific participant, but any participant in the process can react to it.

Interruption - as the word itself says, this event refers to the interruption of a process that is not the natural end of the process.

Multiple events - used when you need to summarize several events into one symbol or event.

Parallel multiple event - occurs only when all the events contained in it. When it comes to the element "Multiple events", it can take place as soon as any of the contained events is activated, which is not the case with multiple events, and that is the difference between the two elements.

Figure 2: Excerpt of the BPD Extended Set (the sub-types of Event element)

	“Catching”		“Throwing”		Non-Interrupting	
Message						
Timer						
Error						
Escalation						
Cancel						
Compensation						
Conditional						
Link						
Signal						
Terminate						
Multiple						
Parallel Multiple						

Source: Garbacz & Kutz (2014).

1.6.3 Rules and tips for a better understanding of the BPMN standard

Anyone can model the process, but the hardest part is getting started. Before creating a model, it is necessary to consider certain issues related to the process to be modeled. Participants need to be considered, their activities, their area of work and, ultimately, the very reason for modeling. When all these questions have been answered, it is necessary to be informed and pay attention to various other details to make the diagram look as clear as possible (Garbacz & Kutz, 2014).

According to the BPMN methodology, it is important to understand that the terms process, model, diagram, and file are not synonymous. As already mentioned, a process is a set of activities and events that have a certain order. The process becomes a model when the rules that show the relationships between the elements of the process are included in it. When the modeled process is displayed graphically with all the associated symbols, it then becomes a diagram that can be saved as a file in various formats. In addition, it should be noted that it is not advisable to model the flow of information according to the BPMN standard, although they belong to the basic elements (Garbacz & Kutz, 2014).

It is recommended that switches be used whenever there is a need to branch or merge activities. Switches should not be seen as decisions because they do not actually make decisions but steer the process in a certain direction. The activity that precedes the turnout is the one that determines in which directions the process can go after the turnout (van der Aalst, Desel, & Oberweis, 2003).

To achieve the desired outcome in the end, I use tasks. Tasks are the heart of the process. In BPMN, tasks are the technical part of the activity category. When naming tasks, I try to stick to the principles of object-oriented design (verb) plus (object). For example, I would say buy groceries instead of first take care of grocery shopping. Ordinary events can be used in the process flow to indicate a status or milestone (Thamhain, 2014).

There are several types of tasks according to the BPMN standard and these are manual, user and service tasks. The manual task, as the name suggests, is performed by the participant without any help from a computer. Unlike a manual task, service tasks are automated and user tasks are located between these two options and relate to the task performed by the participant, but with the help of computer software (Garbacz & Kutz, 2014).

Some elements of a business process model need to be given a name that is related to what that element represents. Each activity needs to be named in a way that nouns and verbs are used in the present tense. It is recommended that the activities are not given the same name, but that each has a different name. In the case of fields, they are given the name of the participant to whom the elements in that field refer. Also, names need to be assigned to events, depending on what each event represents. As for the event, it is important to distinguish the fact that it refers

to a point in the time of the process, and the work step refers to the time interval in the same (Aldin & de Cesare, 2009).

1.6.4 Types of diagrams

Business process modeling according to BPMN methodology enables the creation of 4 different diagrams, and they are business process diagram or sequence diagram, conversation diagram, collaboration diagram and choreographic diagram. A business process diagram is the most common diagram and the one most commonly used because it can give meaning to each element and present a detailed process structure. Apart from being the most demanding diagram to make, the difference between business process diagrams and the other three diagrams is that the first one can use all the elements described in the previous chapter, while the other diagrams use only certain elements (Garbacz & Kutz, 2014).

1.6.5 Choosing a modeling tool

The process can also be modeled with a pencil, on paper, but in addition to today's technology and so many tools available, manual modeling is not necessary at all. Business process modeling tools enable speed and ease of creation with the use of various possibilities that a particular tool offers, such as simulations and export of models in various formats. The difference between a hand-drawn process model and a computer-generated model is enormous. Handmade and drawn process is usually seen to look messy and disorganized even though everything is drawn properly. On the other hand the modeled process using a modeling tool is organized and clean, making it the best option to make the graphic display clear, neat and organized (Gleeson, 2004).

However, in order for a computer tool to comply with the BPMN 2.0 standard, it cannot only be based on certain items on the standard, but must be fully compliant with all specifications of the standard and only then can the tool be said to comply with the BPMN 2.0 standard. Which tool to choose depends on the size of the company, the complexity of the process, the level of detail required, the importance of the process, and various other factors of importance that vary from company to company. For example, smaller firms with simpler processes may use tools that are less formal, while firms with complex processes still need to research the market more before choosing the tools to use for modeling (Cameron & Green, 2015).

When choosing a tool, it is desirable to define the criteria and importance of each criterion by which the tool will be sought, focus on the goals that need to be met, analyze the various potential tools and choose the most appropriate. Defining criteria is important in order to eliminate those tools that do not meet them and find tools that are in line with the needs and goals to be met. Analyzing different tools can be done by first installing a free version of the

tool to determine the ease of installation, then reviewing the tool to see if it contains all the criteria listed as necessary and finally choosing a tool that will have all what is needed to model a particular process (Jahangirian et al., 2011).

2 PRESENTATION OF THE SELECTED COMPANY AND ITS PROCESSES

In the following chapter I will describe and present the company selected for the analysis. Firstly, I will focus on the sector, the company is located in, focus on the activities and business it is associated with. Afterwards I shall change a focus to the company's mission, vision and lastly identification of its processes. Finally, I will further describe and make an overview of the all activities and processes in the company, from managerial through fundamental to support processes.

2.1 Company oversight

The analysed company is part of the conglomerate, comprising of three companies, which deals primarily with HoReCa establishments in Ljubljana region. HoReCa is a name consisting of three words Hotel / Restaurant / Cafe. This term is used in many countries around the world as well as international companies specializing in this sector. This sector is one of the fastest growing in Europe. Initially, it was assumed that this type of business would be temporary, with irregular working hours and low wages, but now a large percentage, mostly young people, work in this sector. Today, HoReCa is an important business term that primarily refers to the catering sector, i.e the food and beverage industry - storage, preparation and serving. The term HoReCa originates from the Netherlands, and is mostly used among European and Asian companies. Over time, the global market became stronger and the term HoReCa entered the jargon of the United States industry and thus conquered the whole world (Hubertus, 2000).

The hospitality industry (HoReCa) is today one of the most dynamic and widespread industries in the world. Catering services are widely available, and restaurants, hotels, procurement and transportation companies and many other manufacturers order, deliver or process products on a daily basis in a market covered by the HoReCa sector. HoReCa is an important service in the European economy and has grown strongly in recent years. Together, they account for about two-thirds of the turnover. However, despite the success of large hotels, fast food, chains and franchises, according to current statistics, this sector in the world is still dominated by smaller, independent (family) organizations (Casolani & Del Signore, 2016).

Caterers can and must attract new customers by integrating technology into almost every aspect of their business. Technology is constantly on the move and is constantly "unlocking" new

opportunities, aimed at improving customer satisfaction and increasing business efficiency. The novelties include web programs and applications, web presentations, online promotions, Internet sales and online advertising. Most HoReCa employers seem to have already embraced new technologies to improve their business. In the hospitality industry, the Internet is not only used to gather information, but also to sell, promote, educate - simply put, technology will make your business easier and better (Hubertus, 2000).

Majority of jobs in this sector and the analysed company tend to be temporary, with irregular hours, some of them moving extremely late in the night (concentrated on events in restaurants and general working hours in bars and clubs). The pay in the analysed sector is relatively low, with a few standardized career prospects and many more than after some time simply change the job and sector with it, maintaining a high proportion of students and young people working in the sector (Schmidt, 2003).

The selected company primarily focuses on food and beverage services provided across bars and restaurants in the region. Within the mentioned company I can find 12 different bars and inns in Ljubljana and its surroundings. The company manages, renovates and constantly creates new bars and inns in Ljubljana. The bars are of various backgrounds, from strict restaurants to bars and nightclubs. In this spectrum you can find various established theme restaurants that are successful in their affiliation, majority of them sharing some common values that have proven to be success factors.

On a closer look to the analysed restaurants, these above mentioned success factors include: high qualified chefs, good and constant food, ambient and interior designed for bringing the customers closer to the theme and taste they are served on a plate, carefully picked out music and program that goes hand in hand with the restaurant food and theme, similarly specially picked out plates, tables, waiters' outfits and carefully created not too short and not too long menus with various delicious food. Similar, in different bars owned and managed by the company I can find the success factors that include carefully picked out theme, entertainment program, interior designed specifically to attract the line of customers it was meant to attract, i.e., before set types of customers, their age group, background, hobbies, etc. Some of the other success factors include carefully picked out managers of individual bars, waiters with certain knowledge and experience, designed menus and recipes for drinks and cocktails, which can be crucial in increasing the sales of beverages in a bar.

Like mentioned above, this sector is one of the fastest growing and changing in the region and also Europe, especially with the additional influence of the recent Covid-19 pandemic, which colourfully changes the landscape in terms of owners and managers of different bars and restaurants owners in the region. This is also the reason why it is crucial to have an efficient and successful business model, with decent structure and as good processes as possible, which can

allow you competitive advantage to your old competitors and the newly established ones as well (Aaron, 2021).

2.2 The mission and vision of the company

The mission of the analysed company is to raise standards in the making and selling of variety of cafes' and restaurants' products and to perform it in accordance with European standards. With their quality food and drinks production and placement, resulting in sale of quality products, they strive to meet customer expectations and achieve successful business to the satisfaction of owners and employees. The business strategy is focused on modernizing the whole bar and restaurant experience and to become and remain the leading bars and restaurants chain in Slovenia and wider.

By continuously investing in improvements of old and obtaining new locations and products, developing products and services and educating employees, strengthening its position as a leader in the region and becoming a significant player in the global market. In an effort to achieve the set goals, they strive to recognize and meet the expectations of their customers, strengthen the company's competitiveness, invest in the development and modernization of business and actively monitor and apply development trends in the area sector of their every day business.

2.3 Identification of the company's business processes

Firstly, it is important to identify all of the processes in the company and to classify them into their own categories, being managerial processes, fundamental or basic processes and support processes, as mentioned in previous chapters. The company was analysed as a whole entity and crucial processes were located and divided accordingly into their fitting category.

Upon observations and various conversations with the employees, 8 of the most important processes for the company have been located. All of the processes listed in alphabetical order are: accounting, business planning, contracting, data and reports preparation, managing the finances, procurement of goods, provision of services and sales supervision. The processes allocated in the three categories listed above are as follows:

Table 1: Processes in the analysed company

Managerial processes	Fundamental processes	Support processes
Contracting	Provision of services	Accounting
Managing the finances	Procurement of goods	Data and reports preparation
Business planning		
Sales supervision		

Source: own work.

As exhibited above, processes listed in their categories accordingly are contracting, managing the finances, business planning and sales supervision in the managerial processes category, provision of services and procurement of goods in the category of fundamental processes. Whereas in the support processes category are processes of data and reports preparation and accounting.

Firstly, the managerial processes are described below, followed by the descriptions of fundamental processes and ending with the description of the support processes in the analysed company.

Roles that are present in analysed company are: waiter, chef, manager, financial manager, financier, sales supervisor, supplier, storage keeper, distribution manager, accountant, data analyst, business manager and request maker, distribution centre keeper, contractor, contracting manager and human resources manager.

Departments include data and reports preparation department, data analysis department, contracting department, sales supervision department, human resources department, accounting department, business planning department, bars and restaurants (further divided into meals and drinks preparation and waiters' section), finances department, and main office (mentioned in business planning process).

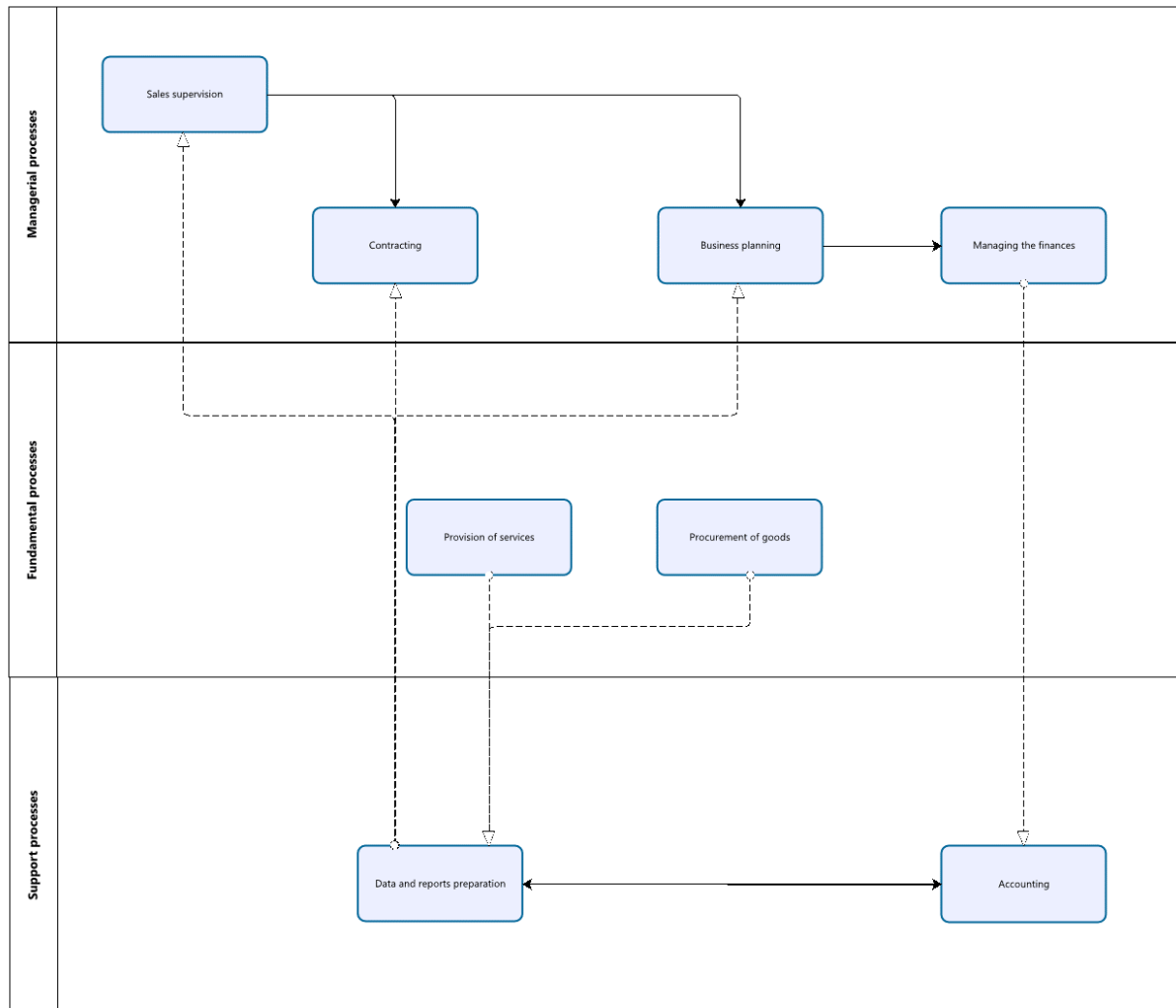
All of the mentioned roles and departments are included and stated under the AS IS analysis of the processes in the analysed company. Data and reports preparation department and data analysis department are the most symbiotic departments, first leading the processes of sorting the data and second continuing the path of preparation and executing some of the tasks important for the day-to-day business leading of the company, as evident in the many processes (e.g., Managing the finances process). Other departments are as names suggest: sales supervision in charge of supervising and overlooking the provision of services process i.e., the sales, human resources controlling, influencing, improving and checking the work performed by the employees, accounting and finances department in charge of receipt issuing, control, producing and dealing with all financial statements and other controlling based documents, bars and restaurants sections as a departments that are part of the provision of services process and main office, whose primary concern is business planning.

As evident in the processes described in the following chapters, waiter and chef are the most crucial to Provision of services process, financial manager to the process of Managing the finances, sales manager to the process of Sales supervision, storage keeper, supplier and distribution manager to the Procurement of goods process, accountant to the process of Accounting, data analyst to the Data and reports preparation process and manager to the processes of Contracting and Business planning.

2.4 Process architecture

Figure 3 shows connections among the processes on the top level tackled in my master's thesis, which will be described afterwards.

Figure 3: Process architecture



Powered by
bizagi
Modeler

Source: own work.

As evident in the figure above I have processes divided into three sections, managerial, fundamental and support processes. Arrows on the figure represent the links among the processes in terms of outputs produced in certain processes for further use in another ones. If I start with the fundamental processes since they do not use any outputs of the other processes, both procurement of goods and provision of services process do not have any inputs and have an output to data and reports preparation process. In the procurement of goods process this is basically all the information of obtaining goods, including scanned delivery notes and receipts to be paid, whereas in provision of services they include all data related to sales, times of individual services provided, persons providing them, amounts and types of services provided,

etc. Before continuing to next process, it is important to stress out that the arrows from fundamental processes are dashed lines, similarly arrows coming from managerial processes to support processes and vice versa are also dashed, since they are moving from one section to another (e.g. Managing the finances - from the Managerial processes section to Accounting – Support processes section), so it would be easier to differentiate among the lines and find the connections between the sections easier..

Moving on to next section of the support processes, firstly we notice the Data and reports preparation process. This particular process has outputs into all four managerial processes: Sales supervision, Contracting, Business planning and Managing the finances. Outputs are in the same order as follows: sales updates, based on hours, days and workers, partnerships data including partners and employees' sections, sales and other useful information related to individual locations and lastly for the Managing the finances all of the new invoice's data with highlighted changes. Data and reports preparation also has output in terms of new invoice data for the Accounting process, whereas the Accounting process has an initial invoices data and is evidencing the changes in invoices. Besides mentioned one Accounting process also has an output to Managing the finances process in terms of receipts paid, financing requests and receipts to be paid.

Lastly, when observing the managerial processes, Sales supervision is the starting one, since it uses the input from Data and reports preparation to prepare two outputs. First one is for Contracting process in terms of information regarding revenue gains from the individual employees on certain time frames and second one for Business planning process in terms of sales increases or significant drop in sales on individual locations, during the past period. Business planning has also output forwards to Managing the finances process in terms of business plan and its financing approval, part of Managing the finances process includes confirming the finances for the changes proposed in a received business plan.

2.5 Managerial processes

This chapter will present the managerial processes of contracting, managing the finances, business planning and sales supervision.

2.5.1 Contracting

Contracting through the activity of communicating with partners is one of the crucial managerial processes, since it is a foundation on which operative and financing, money making processes are built upon.

Process of contracting starts with weekly and annual inputs received in the form of the reports from the data analyst (output of the Data and reports preparation process). Once the documents containing information about the current partners (on all areas from cost minimizing, sponsorships, value providers to revenue earner partners) are received, the person in charge of the contracting process checks if there are any alarming warnings.

If there are none, first part of the process is concluded. In that case contracting manager goes on with the monthly potential search for new partners, which is a subprocess in the mentioned process. The person firstly makes a list of potential new partners, then he or she sends the emails (with already prepared template) for potential cooperation to the future partners. At that point the waiting period is engaged until the contracting manager receives any response. If a certain potential partner answers the email cooperation invitation positively the manager gets in contact with the partner on a meeting. Afterwards it either receives negative answer ending the process or receives a positive one, which goes further into contract preparing and later signing, which also concludes the process.

If there are any warnings, contracting manager checks the nature of the warnings, which are indicating the too high number of costs or expenses in an individual or several partnerships. If there is a warning, manager checks if there was a simple error, in case of which the error of stating expense is corrected and the process is concluded. Otherwise, the person in charge i.e., manager contacts the partner and if an agreement on lower expense cannot be made, the initial contract is terminated and it therefore ends the process. If it can, then the expense is changed and it concludes our process with positive remark and minimized expenses.

Contract can also be terminated if the change of staff suggestion is an output received from the Sales supervision department in which case the manager double checks the output and terminates the contract in hand. The person in charge, i.e., manager is communicating and checking with the employee, that possibly triggered this event or with any new employees, where human resources manager, in charge of onboarding new employees gives short instructions and teaches the employee of any lack of knowledge that may be present and is source of the problem. If the problem can be solved with such simple learning the process here comes to an end, if not then the contract of the employee in hand is terminated. With this activity finished, the whole process comes to an end as well.

Process, like described above includes mostly communication with partners and arrangement of partnerships. Such partnerships include also employment relationships and communication with and between them.

The whole process includes activities like finding, listing and keeping a variety of partners, from customers and suppliers to users, user groups and different privileges allowing additional value

for different partners. It is crucial for minimizing a variety of costs and expenses an individual entity and company operates on. For instance, from finding better partners in charge of space rentals to some others that provide services or are part of your workforce like employees, different drinks and food distributors. This also includes variety of repeating customers and companies that are having repeating events, space rentals and or different spending at the entity, which consequently lead to increasing the entity's and the whole company's revenues.

It is also consisted of status of making and sustaining business with suppliers, searching for duplicate partners, searching for new and better alternatives and or mistakes in the prices written in procurement files i.e., documents of received goods.

2.5.2 Managing the finances

The Managing the finances process is another one of the important managerial processes and it includes arranging the total finances of individual local bars and restaurants. Two of the triggers for the process are started in the Accounting department.

First trigger includes new records of procured goods input in the IS. It is continued with preparing a list of all receipts and delivery notes. Then the accountant compares the prices on delivery notes and receipts to the agreed ones on contract. If the prices check out, the process is concluded. If they do not it continues to two simultaneous activities. First of informing the supplier about the wrong prices and demanding compensation for the funds, which follows by a waiting period for the funds to be refunded and then the process concludes. Second of informing the Finances department to stop the payment process, which is continued by data analyst checking the requests*1.

Second trigger starts with receiving the financing request from one of the entities inside the company, where it matters if it is a single financing request (made for different onetime expenses, everything that is not bought or acquired on weekly or monthly basis) or if it is an occurring financing request.

If it is a single financing request, the question of amount is being checked and if the sum is not greater than 1000 € the request is handed over to the data analysis department, which waits until 15th of the month. If it is greater than 1000 € then the manager decides if it is a required and acceptable expense in which case, he confirms the expense and forwards the required information forward to the data analysis department, which again waits until 15th of the month. If he decides it is not a required expense, he rejects the expense and writes an email to the person requesting the expense, with a reason for declining it. After the email is written and sent the process comes to an end.

If it is an occurring financing request, the person in charge, i.e., financial manager is comparing the cost to the past costs and checks if it is higher than 20% of an average monthly expense for an individual product group. If it is not, the person in charge confirms the offer and the confirmation of order is sent to the data analysis department, which again waits until 15th of the month. On the other hand, if offer supersedes the limited amount, the process continues with the financial manager checking the number of sales for individual product group, which is an output of process of Sales supervision. It compares the increase of expense in certain product group with the increase of sales in the same group. If the increase of sales is equal or higher than the compared costs, the financial manager confirms the request and forwards the information to the data analysis department, which again waits until 15th of the month. Alternatively, if it is not (with an adopting percentage of 3% for measurement errors) the person in charge denies the request and sends an email with a rejection explanation to the request maker, which brings the process to an end.

Third trigger is a time trigger. On the 15th of the month the receipt payments process starts and data analysis department is organizing all of the received requests for receipt payments.

If there are not any requests from the previous periods, data analyst organizes a list of all current requests and is then continued by checking these requests*1. If the requests are not going to be paid, data analyst is sending an email with the rejection explanation to the request maker, which ends this process. If yes, then it is checked if requests include all of the necessary data for receipts being paid. If it does, it continues to issuing the payment of the receipts*2. If not, it continues to retrieving the missing data*3.

If there are any requests from the previous periods, employee in finance department is checking the requests. If there is a data missing, it continues to retrieving the missing data*3. If missing data is found, he sends the data to the data analysis department and goes back to checking the requests. If missing data is not found, he or she sends a request for additional data to the party in hand and waits for the additional data. If all required data is received, he or she again sends it to the data analysis department, if not the request for additional data is sent to the party in hand.

If there is no data missing the process continues with issuing the payment of the receipts*2, which is followed by storing the paid receipts in a database and ends this process.

The process includes arranging the variety of subsectors including the different payment methods, arranging and evidencing the company's cash flow, bank statements i.e., it includes the import and export activities of bank statements, review of payments, payments by invoices, and payments to be made. It is one of the most crucial processes for enabling the company's health growth and indicating if it has any current failures or places for improvements, it is also

important because of the legal obligations company has towards the state in terms of creating and sending different statements and reports. It also enables the company to survive on daily basis in terms of its' needs of financing, having enough cash flow as well as minimizing the amount of account receivables, with it maximizing the company's and its' entities utility and consequently even productivity.

2.5.3 Business planning

Below further explained process can be therefore started in three different scenarios, i.e., by activating one of the three triggers. First one is related to a specific time period, second one to sales volume and third one to acquiring a new location for a bar or restaurant.

In case of the first one, on annual basis the business manager (from the main office) checks whether the location analysed (bar or restaurant) needs to be renovated. Additionally, it answers the question of whether it was renovated in the past 5 years? If the answer is yes, the process comes to an end in this particular area, fulfilling the time criteria. If the answer to the question asked is negative, the person in charge makes a decision of the necessity in renovating the location in hand. Negative answer leads to end of the process, whereas positive one is taking us to the next step, continued below under the next step.

In case of the second one volumes of sales are observed. To be precise Sales supervision process is forwarding an output in case of significant sales drop. Receiving the report of sales analysis is the trigger for starting the process and taking it to the next step, continued below under the next step.

In case of the third scenario, the company has recently acquired a new location, which is to be used for transferring one of the established brands or for building the completely new one from scratch. Trigger in this case is simply acquiring new location, which takes us again to the next step, explained in the following paragraph.

The next step leads the business manager to making new or modified business plan with new or updated offer for one of the locations. Firstly, the manager accesses to data and reports preparation outputs, which shows the trajectory of sales for individual and or similar locations. That information is then used in order to set the winning formula in terms of offer (products that sell and earn profit), branding of place (successful brands of the company) and decorating the place (taking ideas from experts that performed renovations on other locations, i.e., decorators). The manager prepares the business plan and sends it forwards to the financial manager. Every suggested change, that is either higher or lower than 1000 € triggers the process of Managing the finances. Upon receiving feedback, the final offer and orders are issued to an external contractor and in this point the process is finalized.

Process can be performed either at the opening of the new location, after the renovation of the bar or restaurant, annually or when the needs are such, that the new offer must be assembled or the old one updated and changed.

It includes making or updating the list and composition of the offer, so it suits both the market's needs and the requirements, suitability of the entity (bar or restaurant). This means that the offer will be assembled, so it maximizes the profit for the entity and possibly increases sales at the venue and with it profit as well. Main actor of the process is usually a manager, that performs the overview of possible items, sales of past items by individual business unit, inspecting and analysing all possible and potential sales items and also purchasing items, so it can be established that some of the ingredient's prices have not increased through the roof.

Furthermore, it consists of checking and creating a perfect entity – offer fit with the most suitable combination of groups of items, making and putting together the layouts of price lists, adjustment of supply and prices to demand and market situation, making the end result of exemptional and close to perfect version of menu i.e., offer that suits the entity perfectly and will most likely increase/have the substantial number of sales of items offer is made of.

2.5.4 Sales supervision

A managerial process that is most important for continuous and constant supervising and checking the holistic overview of the company. The process starts on a first working day in the month (time trigger). Firstly, the holistic data of sales information is obtained from Data and reports preparation, then the monthly sales for previous month are compared to the sales of the month before the previous one.

If the sales had an increase, the question of whether it was 20% higher than the month before is checked. If it was not the process is concluded. If they were, the person in charge, i.e., sales manager is writing a ticket of confirming that, and sends it to the person in charge of managing the finances process i.e., financial manager, which also concludes the sales supervision process.

If the sales had a decrease, the similar question of whether the decrease was 20% or lower. If it was the process is concluded. On the other hand, if the decrease was higher than 20% the process, it continues with the analysis of staff performing the sales. Firstly, the possible change in staff is checked and if there was not any change in the staff the alarming ticket is being sent as an output to the person in charge of business planning, signalling him or her that there was a significant sales drop. Alternatively, if there was a change in staff, the person in charge (sales supervisor) finds the reason for the drop and makes an appropriate decision for removing the located obstacle and preventing the lower sales in coming months along with it. In some cases,

this obstacle can be presented in a case of individual employee in which case the change of staff suggestion is an output sent as part of the Sales supervision to the Contracting department.

Some of the reports that are being analysed include all the accounting related reports (directly connected to the supporting process of accounting), sales by items and sales by days (directly connected to the below-mentioned fundamental process of Provision of services), turnovers (individual items, groups, which are connected to different processes from which the data is being driven), turnover by waiters, in which I can observe the efficiency of individual employees and many more.

It involves key decision making and overviewing the employee work in order to maximize the future profits of the company, which can be performed solely from the point of the managerial role.

2.6 Fundamental processes

2.6.1 Procurement of goods

The process starts with a continuous weekly check of inventory, which is a time trigger, that starts the whole process (1st working day in a week). The employee working in a bar or restaurant firstly checks the inventory. If there is not a shortage of any of the products the process is concluded and waits for the next weekly check of inventory. If the inventory checking process provides an answer for the shortage of individual or many ingredients and products, the process continues with the procuring the lacking goods.

The course of the procurement of goods process continues with the following activities: preparing a list of all the missing products and then preparing and placing the order to the supplier. More in details it continues with checking the list of missing products and goods. Storage keeper is handling the process of ordering the missing goods from the supplier, with ordering of all missing raw materials related to the business of selling. If the amount ordered is higher than 1000 € it sends the request for the approval from the financial manager, which is reviewing the order request. If the order is approved it goes on to waiting for a delivery.

If it is not approved, the process continues in two activities, firstly with cancelling the order at the supplier, which ends the process and secondly with informing the bar/restaurant about order being cancelled, which brings the process back to preparing and placing the order.

If the amount ordered is not higher than 1000 €, the process continues without the waiting period for the mentioned activities. It continues in two simultaneous activities.

First includes waiting for the receipt, followed by receiving the receipt and then verifying it. If everything on the receipt is as it is supposed to be the process continues with paying the receipt on every 15th of the month, which concludes the process. If everything on the receipt is not as it is supposed to be, it continues with coordinating the supplier to correct the receipt, which goes back to waiting for the receipt.

Second simultaneous activity includes waiting for the delivery, which is followed by verifying the delivered goods and documents. If everything is in order, it continues to three simultaneous activities, first of which is storing the goods, which concludes the process. Second of which is updating the IS with delivered goods data, that also concludes the process and third is scanning the delivery note to Data analysis department for reporting purposes, which also brings this process to an end.

If everything is not in order it again continues with two simultaneous activities, first of is sending the scanned delivery note to Data analysis department for reporting purposes, which again brings this process to an end. Second is sending an alarming ticket to Data and reports preparation department, which leads data analyst to coordinating the supplier to supply the missing goods and brings process back to waiting for a delivery.

The more descriptive and in length observation of delivery process activities, that was collected from the employees and observation is as follows: order is being issued to the supplier, the supplier sends the goods for delivery to the company (waiting time), the arrival of the goods in the company, checking the order and storage of goods in the warehouse. The supplier then sends the ordered goods along with all documentation to the company, which represents a waiting time period for the process and our company. Next is the arrival of the goods in the company, where storage keeper accepts shipments and delivery notes. Then he or she receives and updates the bills and documents with listings of the current goods with current prices. Then the question if the received goods check out to be correct and right in comparison to the prices and agreed upon sums and quantities is asked. If no an alarming ticket is being sent to the guys in charge of data and reports preparation, i.e., data analysts and then the process continues. If yes, the process just continues with entry of delivery notes and also sending all of the required documentation (bills included) to the data and reports preparing department. Upon that, the waiter or chef (depending on the ingredients, materials) controls and inspects the state of raw materials. If they are not as expected in terms of quality and quantity the alarming ticket is again being sent to the department in charge of data and reports preparation. If they are the process concludes with the storage of goods in the location.

The business process of procurement is therefore consisted of several activities including checking the inventory, process of ordering goods from suppliers and reviewing and checking the shipment and receipt that came along with it. The end of the business ordering process ends

with a confirmation of the order of goods from the supplier and then follows the procurement of those goods, i.e., suppliers send the goods for delivery. After the suppliers have sent the goods for delivery, the ordered goods arrive at the warehouse. After the goods arrive at the warehouse, the first thing to do is to compare the goods with the invoice or purchase order sent to the suppliers. The comparison is made due to possible discrepancies that may occur due to the mismatch of the ordered goods with the actual goods that came to the warehouse. Only if the goods are properly received, then the process of storing the goods is done. The received goods are stored in a warehouse by a storage keeper and prepared for use or sale.

Like mentioned above inventory checking is one of the sub processes in the procurement of goods process, which is most closely related and supporting the process of goods procurement. I should not forego the importance it has on other processes as well, especially the sales process and financing one, since without proper inventory, proper accounting also can't be performed, causing the company to lose time, funds and profit (with the example of goods lacking). The whole process is done on weekly and monthly basis and is performed by the employees in individual entities (storage keepers, waiters and chefs) and in the distribution centre (distribution manager or distribution centre keeper). Activities consisting the process include inventory inspection and control of inventories (primarily related to purchasing, inspection of all inventories, transfers between warehouses, write-offs, printout of inventory sheets, inventories and calculating for weights of weighing accessories and goods).

It is the procurement process, which includes activities of ordering of all missing raw materials related to the business of selling, acceptance of shipments and delivery notes, entry of delivery notes, control and inspection of the state of raw materials. This includes all the materials used in either direct selling or as ingredients for meals, cocktails or any other products that are related to direct offer represented to customers and guests of the institutions.

The whole process is one of the fundamental processes, that can minimize the expenses of the company to a rather significant level through the means of obtaining all of the required ingredients and products at lower prices, finding the mistakes of that price being higher than agreed upon, which altogether results in profit maximization for the whole company and individual entities. Besides mentioned more applicative activities and functions, it also consists of handling the process of ordering the missing goods (with the help of the activities of inventory checks, which allows the information of lacks of certain items and products to be passed onto the procurator in this case. Because of the constant increase in goods prices and transportation costs it is even more crucial to optimize the Procurement of goods process to a perfection. This also includes logistical views, receiving and updating the bills, documents with listings of the current goods, current prices and also if the received goods check out to be correct and right in comparison to the prices and agreed upon sums and quantities. (Brower, 2022)

2.6.2 Provision of services

The process of Provision of services starts with the customer entering the venue. Firstly the waiter or waitress seats the customer for a free table, in case there is none the process ends with the waiter or waitress apologizing for being full and kindly asking the customer to try checking at a later point, which ends the process.

Upon seating the customer the employee brings a menu to the customers, upon which awaiting time for customers to choose is set. Afterwards the waiter takes the order and writes it into the cash register, which automatically puts out the meal order to the employees working in the kitchen and drink orders to the employees working in the bar. Firstly the drinks are prepared, upon which the waiter takes them to the assigned table. Upon that point the waiter is waiting for a meal to be cooked by a chef and once meal order is also finish (if there was one, if not he or she simply continues the process) the waiter brings meals to the table as well.

At the end the waiter goes to the cash register and checks if all activities were completed accordingly and if everything in connection to the cash register checks out (enough thermal paper for bills, if everything works and he also understands it). If everything checks out the waiter issues a bill and collects the payment from the customers. Alternatively, the waiter sends output to the person in charge of maintaining the cash register, which deals and removes any possible obstacles. After the payment is collected, the waiter shows the customers out, which completes the process.

Provision of services is one of the fundamental processes that is most crucial for obtaining revenues and constant cash flow. From the whole process you can derive data like traffic, number and sum of sales reporting and editing of working days, which includes reports of individual waiters, shifts, days and the volatility of sales in those individual segments, with which the manager can more easily oversee the whole process and efficiency of individual time and employee's segments. It also allows the manager to overview times of arrivals and departures from work, from the side of employees, which is yet additional way of controlling and understanding the efficiency in sales on a company's daily basis.

Operating part of cash register is an activity in the Provision of services process. It includes operating different tools (like cash register and similar programs associated to bill releasement, printing, voucher cashing and other activities that are connected to cash register and its' systems and are used by employees, being the roles of waiter and chef). Operating cashier includes some functions only for waiters as users. Those functions are table selections, new orders, different receipts, ending the sale and working time, ordering bill paper, arranging orders of thermal paper, receipts and some basic reports writing.

The cash register maintenance activity is another activity in the Provision of services process and is triggered by one of two events, first one is located in this process, when anything in connection to the cash register does not check out. Second one is every first and fifteenth in month, when the process is initiated in order to prevent the event one from happening.

First step of an activity is checking if there is enough thermal paper for bills. If there is the activity ends and the process is moved onto the next one, if not the employee changes the thermal paper. Second step is checking if everything works as it is supposed to, if yes the process moves on onto the next step. If not the employee finds a bug or a problem and fixes it with one of the solutions (like rebooting, reformatting, editing, assessing through teamviewer, etc.).

If the waiter can not fix the bug in question, he contacts the company in charge of cash register maintaining and explains the problem. Then he waits on a problem to be fixed and upon waiting time he checks if the problem was solved. If it was, this action concludes the process in hand.

If on the first and or fifteenth in the month the data analyst does not have any work in one of the activities described above, he or she still checks the data in the cash registers, edits and sorts the data if needed and optimizes the process of using the cash register.

This is the support process to the process Provision of services, it is still performed by waiters and chefs, but could be performed by any of the employees, only setback for most of the activities, it is required to be physically present at the location. Some of the tasks are constantly, or are cyclically performed by a manager as well. Furthermore, it is consisted of editing the internal management and data of the cash register, printing the internal act, editing settings so they suit better to the user (in this case the waiter or the chef), optimizing the database in the cash register, which allows the users to have an easier overlook in current customers dealing, so they can write the right bills and allocate them to the correct customers accordingly.

Furthermore, the entire process of selling products (all documents and open orders, issued invoices and other documents, entry of invoices, credits, proforma invoices and more) is included in the mentioned process and are all equally crucial for understanding and managing the sales of the company or an individual entity of the company i.e., individual bar or restaurant. It also includes own consumption and consumption of materials, which are crucial to evident, so it is easier to understand the usage and possible minor losses of materials and ingredients in the whole process. Representation and notes for ordering are also making easier the whole process, first one to divide the sales orders losses into representation for the employee's motivation loss and sales acceleration, second so it would make whole process faster, more effective and organized one. At the end of each day all sales information is automatically in a system, ready for the persons in charge of data and reports preparation to use.

2.7 Support processes

2.7.1 Accounting

The process of accounting is started with one of the two triggers, first one being the request received from the managing the finances department and second one is initiated with every first working day in the month by receiving all accounting and financial related reports for the previous months (output of the Sales supervision included).

In the case of the first trigger, department in charge of managing the finances has issued one of the above mentioned financial requests. The accountant in charge receives the request, checks and if needed completes the issued outgoing payments. After this step the accountant simply classifies it as a financial outflow and includes it in monthly statements.

In the case of the second trigger, accounting takes all required, i.e. financial related information from the shared intel, that was previously saved and kept by the department of data and reports preparation. Then the accountant performs and writes all legally and by company required financial statements and reports. Upon writing all of the required reports for previous month, the data is transferred back to data and reports preparation department, which concludes our process.

Accounting process is a support process to the several of the ones mentioned above. Ist` one of the most important roles include creating the documents, reports and statements required by the law, but is not the only task performed in mentioned process, considering the fact that it is important to have up to date and real time statements of above mentioned statements in order for managers to perform their job and act according to most recent results, with that mentioned I can also see that indirectly it is also a supporting process for Sales supervision process, that can be found in managerial processes column.

2.7.2 Data and reports preparation

The data and reports preparation process is performed on a daily basis, triggered by receiving the data from the departments. Firstly, all data from the fundamental processes of Provision of services, Procurement of goods and the relevant documents from the support process of Accounting are received and stored by a data analyst into IS of the department.

Second step in the process is sorting all of the data accordingly, regarding its output. Next activity includes checking and observing the data in length. If there is not any new data in the specific field the process concludes. If there is, the process continues simultaneously to four possible outputs. Data is sorted regarding the four future outputs the whole process will provide,

which are named based on the location of where are these outputs going. These outputs are outputs for Accounting (the invoices data), Contracting (data about the employees and partners sections), Business planning (data related to individual locations) and Sales supervision (sorting the sales information).

First of all, complete accounting output consisting of all of the financial statements, bills and invoices is sorted and prepared, which finishes the first activity. In details the process continues with sorting and preparing all of the new invoices, which continues to two simultaneous activities of updating the whole organized statements into IS, which concludes the process and second one of checking if there are any important changes, which is performed in the finances department. Financial manager checks the changes and if there are none, the process comes to an end. If there are any changes in the invoices, he or she stresses out all of the invoice changes, which leads to updating the whole organized statements into IS, which also brings the process to an end.

Second of all, the person in charge of the data and reports preparation prepares the output for Sales supervision department, which is based on the data retrieved from the sales process (sales data). First activity includes sorting the sales based on hours, days and workers in charge. If there is not a significant outlier (in terms of extremely high or low sales per worker, at given day or hours), a holistic report with newest data is prepared and uploaded to the IS, which brings a process to an end. If there is a significant outlier the process continues with preparing sales updates. It is followed by simultaneous activities of informing the sales supervision department about recent updates, which concludes the process and of sorting and organizing all sales and other information for business planning.

Third of all, business planning output is prepared (data based on individual locations), which is consisted of the holistic overview of the location analyzed (included all if any renovations have been made to the location, as well as any other possible changes in location or venue) and other data, that might help decision makers come to a better solution. It is performed with sorting and organizing all sales and other information for business planning (same activity as in the end of the previous paragraph), which is followed by preparing a holistic report for business planning department, which ends this process.

Then the data analyst prepares the fourth and last output. Contracting output (from the partnerships data is prepared, based primarily on the intel received from the process of procurement of goods. It starts with sorting the data to the employees and partners sections. If the new data is not important a holistic report with newest data is prepared and uploaded to IS, which concludes the process. If the new data is important, the data analyst checks if there is an outlier in employee section. With affirmation, he prepares working hours and profit reports for the outliers and then informs the Contracting department regarding new outliers, which brings

the process to an end. If there is no outlier in employee section, the contracting department checks the importance of individual deals for priority and then prepares a short-term goal in terms of partnerships.

If there are aims in obtaining a new partner, he or she writes important communication goals and research needed to be performed about new parties, which continues in summarizing a list of goals. If not he or she writes goals for obtaining better deals with existing partners, which again leads to summarizing a list of goals. Then the data analyst prepares a list of all the new deals with companies, wrong orders and requests handled in the past period. He or she summarizes it into a report for contracting department, which concludes the fourth activity and with it described process as well.

Like explained above, first part of the process includes collection of all entries, reports and performed analysis of the gathered reports. Secondly it is consisted of sorting and overviewing the complete available data, thirdly it is mainly analysing all of the results and data already obtained and checking the constant and timely indicators if they are acceptable and above previously set bars. It is concluded with the results of analysis and suggestions for improvements and increase of current status in different business sectors.

Data maintenance is performed by business data analysts and is considered as a support process, since it evolves data analysis. Consisted of different data exports and editing of all company data combined with the analysis the end results of the beforementioned activities, crucial for easier and better decision making in the future.

Furthermore, it is consisted of export of the following categories, documents and other demands: compliance with General Data Protection Regulation (GDPR), exports for Financial Administration of the Republic of Slovenia, which is financial office of the country, exports for accounting purposes, exports of different articles, goods in excel, making and keeping backups and diary of all these, for legal and management purposes. This is also very crucial process in terms of business processes improvements, since the whole BPM is based on retaining the correct information from the manager and the appropriate data, which is saved and created during the data and reports preparation process.

3 ANALYSIS OF CURRENT BUSINESS PROCESSES

In the following chapter a holistic analysis of the company processes will be presented with suggestions for their improvements and changes as well as for their implementation. Firstly, the reasons for selection of certain processes are described, upon which the reasons for selection of these processes are described in length in the following paragraphs, among which three have been analysed into even more detail and prepared for making the improvements on them in order

to enhance the most crucial parts of the company. After performing this additional analysis and structuring the above-mentioned processes, examination of their problems is performed and suggestions for their improvements are given.

3.1 Selection of the business processes for optimization

I have selected the following processes for detailed analysis, optimization and future improvements: data and reports preparation, procurement of goods and managing the finances. Specific reasons for selecting these processes are explained further below in subchapters 4.1.1 – 4.1.3. Some of the common reasons include: their places for improvement, considering the fact these processes have not been optimized since the beginnings of the analysed company, possible impact they can have if changed to minimizing the costs of the company and increasing the sales of the company. They also possess financial potential in terms of reducing costs, need for optimization, due to the number of problems they cause and need for modernization.

All of these processes have been in the same or similar form from the foundation of the company and their first days of existing and business making. All three of these processes are therefore extremely outdated, mostly due to the mentioned fact, that they were all set and made in the sole beginnings of analysed company's business paths, meaning they were initially meant to cover one to two objects (bar and a restaurant) and are now similar, with only few added activities over the years, for the company, who has more than clearly outgrown them, having largely more than 10 different locations. Like stated, at the beginning the company had only one location and bar on which the processes where set upon and has since grown immensely, which caused these processes to be outdated in most of the terms. Some small adjustments were performed, but never from scratch and to a full extent, to these three selected processes.

Procurement of goods process is the one, whose example is the most outdated one, second only to Managing the finances process in some extents, which will be described and analyzed further in the thesis.

3.1.1 Procurement of goods

Main reasons for selecting this particular process, besides the ones mentioned above include the fact, that this process has and always will have the highest area for improvements, due to the everchanging technology and company's mindset that processes need to further improve to be in line with current trends. Procurement of goods is the most crucial of processes in terms of minimization of costs, since not having just the right number of specific products is causing the company to lose money on a daily basis. Same goes for duplicating the activities of individual or different roles, possible waste of time in some of the checking and ordering activities, etc.

3.1.2 Managing the finances

An important reason for selecting Managing the finances process includes the fact that its activities and main purpose lies in decision making of one of the most important areas in a company: finances. This is the reason, why analysing it could provide the biggest impact to the company's way of performing this process and business in general.

There are also no checks of better sales at all, which would be crucial in such process, so I can analyse the raises in sales across different locations and find out the reasons for them, so that the finance department could make a strategy or pattern of sales increases and implement it to other locations. For instance, when the increase of sales higher than 20% occurred in comparison to past months, checking if it happened on other locations, which in case it did not can show an important information to the managers and business leaders in order to understand the success of individual entity, analyse it and try implementing it on other locations.

3.1.3 Data and reports preparation

In comparison to other processes in company, this one is the simplest and the most outdated one. The whole process remained the same as it was from the beginnings of the company.

Firstly, it would be more than suitable to restructure the process and modernise it, replacing the steps and activities in the process with automatically retrieving all of the computer sorted data. Regarding all of the outputs, the activities are simply performed by individual data analysts, performing the data preparations by heart and without any more detailed procedure, which can be proven crucial in improving the day-to-day business dealings of the company.

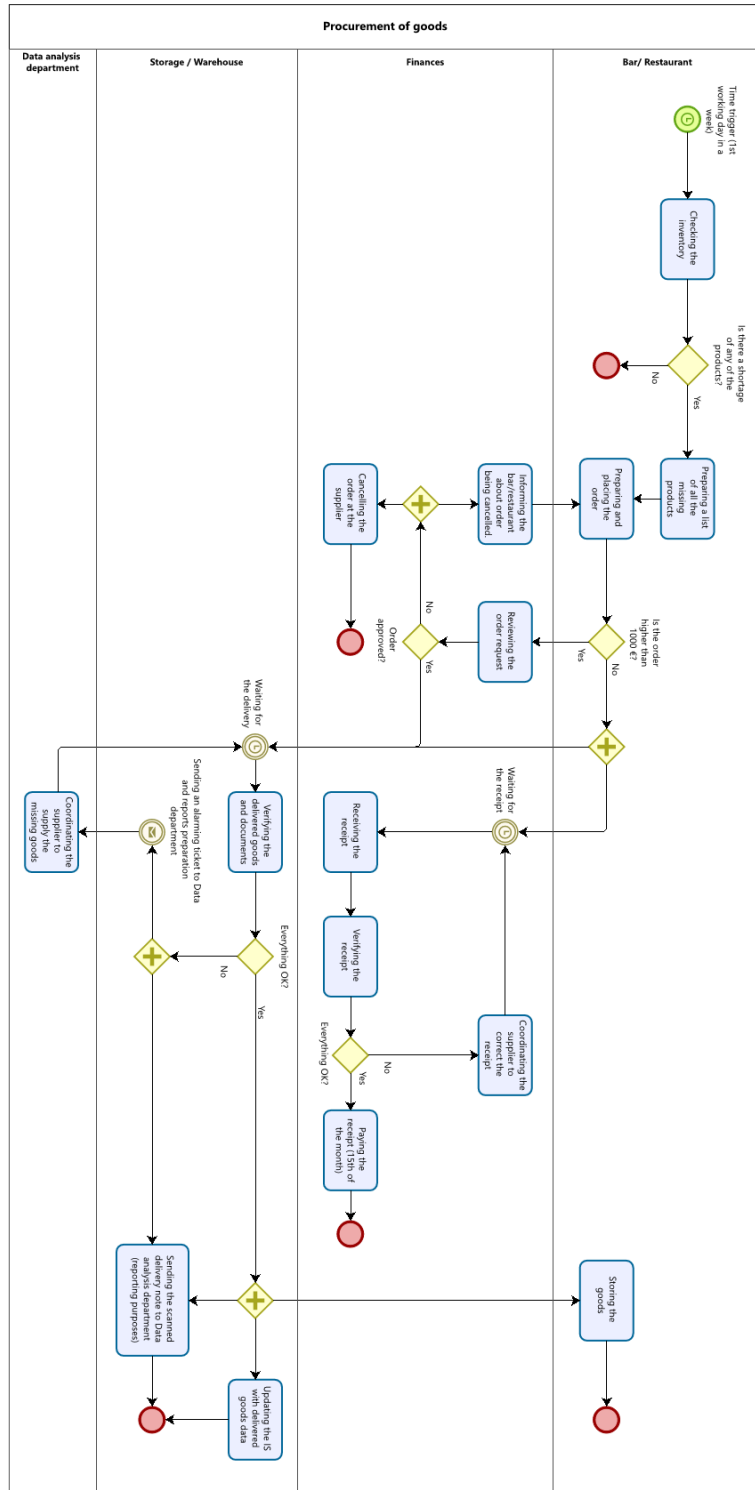
3.2 Preparation and analysis of current business processes

For the selected processes there are analysis performed below in terms of structuring and writing all of the elements of the processes, with their explanations. These analyses are further used in the following chapters when locating and indicating the problems and suggestions for their improvements.

3.2.1 AS-IS model of Procurement of goods

The **detailed description of the process can be found in the chapter 2.5.1.** (Procurement of goods). AS-IS model of Procurement of goods was prepared based on that description, the interviews and workshops performed in the analysed company. AS-IS model of Procurement of goods is presented in figure 4.

Figure 4: Procurement of goods (AS-IS model)



In the below written table, there are names, elements, departments and other important information for the Procurement of goods process. These tables are crucial for better understanding of the processes and later for the preparation of TO-BE models.

Table 2: Elements of process Procurement of goods

Name	Element	Department	Explanation
1st working day	time trigger	Bar/Restaurant	Starts with a first working day in a week
Checking the inventory	activity	Bar/Restaurant	Regular inventory check
Is there a shortage of any the products?	exclusive gateway	Bar/Restaurant	Employee on a location checking possible shortages
Preparing a list of all the missing products	activity	Bar/Restaurant	Same employee makes a list of all shortages
Preparing and placing the order	activity	Bar/Restaurant	Employee places the order electronically to the selected supplier
Is the order higher than 1000 €?	exclusive gateway	Bar/Restaurant	Gateway leading to parallel based gateway, importance of amount on order
Storing the goods	activity	Bar/Restaurant	Storage keeper storing the received goods on a location
Reviewing the order request	activity	Finances	Financial manager is Reviewing and deciding upon request
Order approved?	exclusive gateway	Finances	Decision made based on past months intel received, leading to parallel gateway
Informing the bar/restaurant about order being cancelled	activity	Finances	Informing the order issuer, so that an order can be adjusted

(table continues)

(continued)

Table 2: Elements of process Procurement of goods

Cancelling the order at the supplier	activity	Finances	Order that was previously sent, must be changed into storno.
Waiting for the receipt	timer event	Finances	Waiting for the supplier to send the required invoice
Receiving the receipt	activity	Finances	Accepting it in physical form or scanned
Verifying the receipt	activity	Finances	Financial manager inspects the receipt for the goods stated
Everything OK?	exclusive gateway	Finances	Manager makes a decision in regards to receipt being correct
Coordinating the supplier to correct the receipt	activity	Finances	Manager deals with the receipt correction in case of a mistake
Paying the receipt	activity	Finances	Every 15th of the month financer takes care of paying of the approved receipt
Waiting for the delivery	timer event	Storage/ warehouse	Employee on a location waits for the delivery
Verifying the delivered goods	activity	Storage/ warehouse	Storage keeper checks if everything is okay, leads to parallel gateway
Everything okay?	exclusive gateway	Storage/ warehouse	Employee confirms the quality and amount of the goods and documents
Updating the IS with delivered goods data	activity	Storage/ warehouse	Storage keeper puts all the information regarding received goods into IS

(table continues)

(continued)

Table 2: Elements of process Procurement of goods

Sending the scanned delivery note to Data analysis department	activity	Storage/ warehouse	This action happens mostly for reporting purposes, so the data analysts can access all of the files personally on a location
Sending an alarming ticket to Data and reports preparation department	message event	Storage/ warehouse	They are in need to know all of the failed and wrong orders in order to prepare data and output for other departments
Coordinating the supplier to supply the missing goods	activity	Data analysis department	Data analyst coordinates and corrects the order, so the right amount of goods is received

Source: own work.

3.2.2 Key findings and identification of potential challenges in the analyzed Procurement of goods process

Key findings, ways and suggestions in terms of measures for the analysed process are stated in the following paragraphs. For the Procurement of goods process, there is firstly an indication of findings in terms of problems found in the process and the company in general.

Problems occurring in the analysed Procurement of goods process are:

- role of storage keeper can be more precise, especially in regards to delivered goods verification,
- duplication of storage keeper activity, putting intel into IS (in the activity: Updating the IS with delivered goods data) and sending the scanned delivery note to Data analysis department for reporting purposes,
- unnecessary additional work of financial manager in terms of verifying the receipt,
- waste of time in waiting for order confirmation by the financial manager,
- unnecessary additional work of financial manager in reviewing order requests, should make a protocol, that would eliminate majority of such decisions for manager,

- it is not clearly defined what to do in case of payment being processed before the purchase order confirmation, additionally there are no defined paths when using different methods of payments (PayPal, cash, credit card...) or different documents like proforma invoice,
- redundant work of the storage keeper, who has to manually check if there is a shortage of products,
- employee on a location has to make a list of missing products, manually compare and add up the counts of the products,
- department of goods procurement is not established, which can save enormous amounts of day-to-day costs and deal with minimization of storages across all locations, as well as predicting and overseeing supplies at the individual bars or restaurants,
- loss of traffic in time of waiting for the products themselves (not being sold in this waiting time) and manual comparison of physical documents, in which case there is also an effect of human error widely present,
- employee at a bar does not have time for updating the IS with delivered goods data and is therefore inputting late and useless data into IS,
- storing the goods activity is performed at the end of the process, during which the goods are unusable and are keeping space in the area on a location.

3.2.3 AS-IS model of Managing the finances

The **detailed description of the process can be found in the chapter 2.4.2.** (Managing the finances). AS-IS model of Managing the finances was prepared based on that description, the interviews and workshops performed in the analysed company. AS-IS model of Managing the finances is presented in figure 5.

Source: own work.



In the below written table, I can see names, elements, departments and other important information for the Managing the finances process. These descriptions and elements were the foundation for preparing the TO-BE models of the selected processes.

Table 3: Elements of process Managing the finances

Name	Element	Department	Explanation
New records of procured goods in the IS	trigger	Accounting	Input of new data into IS starts the process
Preparing a list of all receipts and delivery notes	activity	Accounting	Preparing a list of new data received, primarily from the IS, having backups in physical versions
Comparing the prices on delivery notes and receipts to the agreed ones	activity	Accounting	The previously agreed prices on contract have to check out in comparison to the prices on received documents
Do the prices check out?	exclusive gateway	Accounting	If negative leads to parallel gateway, meaning that there is a mistake in one of the receipts
Informing the supplier about the incorrect prices and demanding compensation for the funds	activity	Accounting	In case the prices are not as agreed upon accountant has to make sure the company retrieves the lost funds
Informing the Finances department to stop the payment process	message event	Accounting	An accountant informs the data analyst about an order to be cancelled

(table continues)

(continued)

Table 3: Elements of process Managing the finances

Waiting for the funds to be refunded	timer event	Accounting	An accountant is waiting upon return of the funds from the supplier (for the costs occurred in past)
Receiving the financing request	trigger	Accounting	Receiving the request for financing approval launches the process
Single or occurring financing request?	exclusive gateway	Accounting	Sorting the requests regarding their repetitiveness
Checking the financing amount	activity	Accounting	In case of single requests, the sum is simply checked
Is the sum greater than 1000 €?	exclusive gateway	Accounting	In case of the sum being lower the request is automatically accepted
Deciding about requests	activity	Accounting	An accountant is making a decision on sums greater than 1000 €
Request accepted?	exclusive gateway	Accounting	If yes continues the process in the same way as in sums lower than 1000 €
Rejection of the request and sending the email with the explanation to the request maker	message event	Accounting	In case of rejection an accountant has to inform a person, that issued a request about its failure and the reasons why
Comparing the cost to the past costs	activity	Accounting	In term of occurring expenses a comparison to past costs and revenue is required
Is it higher than 20% of an average monthly expense for an individual group?	exclusive gateway	Accounting	Important to compare, because in this range of 20% it is acceptable to make the request

(table continues)

(continued)

Table 3: Elements of process Managing the finances

Confirming the offer	activity	Accounting	If it is in this range an accountant simply confirms the offer
Checking the number of sales for the individual group	activity	Accounting	If not, an accountant has to check the sales for the past periods to try to establish a reason for higher request
Is the increase of sales less than the compared costs?	exclusive gateway	Accounting	An accountant looks if the increased costs are a result of a sales increase, in which case it makes them acceptable
Sending the email with the rejection explanation to the request maker	message event	Accounting	An accountant has to refuse the request with an explanation, so the request maker can adopt the future requests
Every 15 th in a month	time trigger	Data analysis department	This is agreed upon time for paying the past receipts
Waiting until 15 th of the month	timer event	Data analysis department	All of the confirmed requests are waiting for the 15 th in a month
Organizing all of the received requests for receipt payment	activity	Data analysis department	Data analyst organizes all the request received in the past periods
Are there any requests from the previous periods?	inclusive gateway	Data analysis department	In this way data analysts checks for all the not paid requests from the previous months and sorts them
Organizing a list of all current requests	activity	Data analysis department	Organizing current requests (received in the past 30 days) by date and importance

(table continues)

(continued)

Table 3: Elements of process Managing the finances

Checking the requests	activity	Data analysis department	Data analyst goes through all of the unpaid requests
Will requests be paid?	exclusive gateway	Data analysis department	Checking the validity of the request and if they should be paid
Sending the email with the rejection explanation to the request maker	message event	Data analysis department	Data analyst sends a message to the request maker with a reason for declining the request
Do requests include all of the necessary data for receipts being paid?	exclusive gateway	Data analysis department	If the receipts have a merit and validity for being paid, data analyst checks if there is any missing data
Checking the requests	activity	Finances	Financer checks all the received requests from previous periods
Is there a data missing?	exclusive gateway	Finances	Depending on the missing data, he sorts the requests
Issuing the payment of the receipts	activity	Finances	If financer realizes there is no missing data, he or she issues the payment of past receipts
Storing the paid receipts in a database	activity	Finances	Upon payment is completed, he stores the receipt in a physical and digital form
Retrieving the missing data	activity	Finances	If there is a data missing, he starts the activity of its retrieval
Missing data found?	exclusive gateway	Finances	Depending on the question financer can continue the process

(table continues)

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Table 3: Elements of process Managing the finances

Sending the data to the data analysts	activity	Finances	If the financier finds the data, he or she forwards it to data analysts for sorting and preparation
Sending a request for additional data to the party in hand	message event	Finances	Financer contacts the required department, supplier or other receipt issuer for additional data
Waiting for the additional data	timer event	Finances	At this point financier waits for the data retrieval
Is all required data received?	exclusive gateway	Finances	Depending on this question, the process goes either back to retrieving data or forwards to data preparation

Source: own work.

3.2.4 Key findings and identification of potential challenges in the analyzed Managing the finances process

Key findings for the analysed process are stated in the following paragraphs. For the Managing the finances process, there is an indication of findings in terms of problems found in the process. As for the challenges (problems), that have the most space and possibilities for improvement in the Managing the finances process are namely:

- it is not clearly defined what to do in case of payment being processed before the purchase order confirmation, additionally there are no defined paths when using different methods of payments (PayPal, cash, credit card...) or different documents like proforma invoice, only that in this process it is also critical for sales not only procurements,
- legal regulation of payment process (primarily in regards to the GDPR, also when will it now be processed, coordination of the workers in charge of payments) after the introduction of the new module of different method payments,
- same or more precise identical activity of ‘Checking the requests’ is performed twice, by two different persons (data analyst and financier),
- duplication of activity of checking if there is a data missing (financer performing checks) with the similar or identical activity of checking if the requests include all of the necessary data for receipts being paid (performed by the data analyst),

- in the gateway of checking the increase of sales if it was higher than 20% in comparison to the one occurred in past months, there is no inflation and other macroeconomically oriented factors taken into consideration, meaning that sometimes costs higher than 20% are justifiable,
- if one of the locations is performing above others (answer to the question of ‘Is the increase of sales less than the compared costs?’ is No; there would not be any additional benefit for the company from this significant information.

Furthermore, four of the questions are being asked by a manager, which could all be supported by a computer application and therefore minimise the time and costs of performing the activities in this particular process. These questions include decisions on whether:

- there is a single financing request (gateway of ‘Single or occurring financing request?’),
- the sum of financing request is greater than 1000 € (gateway of ‘Is the sum greater than 1000 €?’),
- it is higher than 20% of an average monthly expense (gateway of ‘Is it higher than 20% of an average monthly expense for an individual group?’),
- and if the increase of sales is higher in comparison to costs for a past period (gateway of ‘Is the increase of sales less than the compared costs?’).

3.2.5 AS-IS model of Data and reports preparation

The **detailed description of the process can be found in the chapter 2.6.2.** (Data and reports preparation). AS-IS model of Data and reports preparation was prepared based on that description, the interviews and workshops performed in the analysed company. AS-IS model of Data and reports preparation is presented in figure 6.

Source: own work.



In the below written table, I can see names, elements, departments and other important information for the Data and reports preparation process.

Table 4: Elements of process Data and reports preparation

Name	Element	Department	Explanation
Receiving the data from the departments	trigger	Data analysis department	Process of data and reports preparations starts once the department receive the required data
Storing the data into IS of the department	activity	Data analysis department	Upon receiving data, data analyst firstly stores all received data into the departments' database
Sorting data regarding its' output	activity	Data analysis department	Data analyst goes through the data and sorts it accordingly
Checking the data, observing the data in length	activity	Data analysis department	Observing the sorted data by categories, length, date of input, ...
Any new data in the specific field?	parallel gateway	Data analysis department	Then it comes to checking if there is any new data in any field
Sorting and preparing all of the new invoices	activity	Data analysis department	If there is new invoices data, first the analyst sorts and prepares them
Updating the whole organized statements into IS	activity	Data analysis department	With either any reported changes from the financer or without them the analyst updates the IS with new prepared data
Sorting the dales based on hours, days and workers	activity	Data analysis department	Data analyst sorts the new sales data as described

(table continues)

(continued)

Table 4: Elements of process Data and reports preparation

Is there a significant outlier?	exclusive gateway	Data analysis department	In this way the analyst checks if there are important changes in workers' performances, extremely high or low sales per worker in certain time spans
Preparing a holistic report with newest data and uploading it to IS	activity	Data analysis department	In case there are no new outliers a prepared holistic report with newest data is uploaded to IS
Preparing sales updates	activity	Data analysis department	If there are such outliers' new updates in sales are prepared
Informing the Sales supervision department about recent updates	message event	Data analysis department	Previous activity led to parallel gateway of this event and below mentioned activity of sorting and organizing
Sorting and organizing all sales and other information for business planning	activity	Data analysis department	New data is prepared based on individual locations
Preparing a holistic report for business planning	activity	Data analysis department	A holistic report is prepared as an output for the business planning department
Sorting the data to the employees and partners section	activity	Data analysis department	Data about partners is sorted into two most important sections
Are the new data important?	exclusive gateway	Data analysis department	Data analyst checks for any important indicators
Preparing a holistic report with newest data and uploading it to IS	activity	Data analysis department	If no new important data is found, the analyst prepares the newest holistic report and uploads it

(table continues)

(continued)

Table 4: Elements of process Data and reports preparation

Outlier in employee section?	exclusive gateway	Data analysis department	The data analyst checks for the outliers (is there any significant changes in the employees work present)
Preparing working hours and profit reports for the outliers	activity	Data analysis department	Then he prepares all outlier information, when it comes to individual employees and stresses it out
Informing the Contracting department regarding new outliers	message event	Data analysis department	Upon completion he or she sends it to the contractors, so they can act on the newly received data
Preparing a list of all the new deals with companies, wrong orders and requests handled in the past period	activity	Data analysis department	Upon summarizing the information obtained and organized from the contacting department, data analyst prepares the received data and combines it with already prepared data
Summarizing it into a report for Contracting department	activity	Data analysis department	When previous activity is performed, data analyst simply organizes it further and summarizes it as a useful report for the contractors
Checking the importance of individual deals for priority	activity	Contracting	Contracting manager firstly revises the importance of existing and possible future deals
Preparing short-term goals in terms of partnerships	activity	Contracting	Based on prepared priorities, he or she establishes short term goals for the department

(table continues)

(continued)

Table 4: Elements of process Data and reports preparation

Are we aiming to obtain a new partner?	exclusive gateway	Contracting	Based on this question contractor continues the process into one of the directions
Writing important communication goals and research needed to be performed about new parties	activity	Contracting	Contractor prepares the necessary document and performs the required research
Writing goals for obtaining better deals with existing partners	activity	Contracting	Contracting team establishes goals for obtaining new partners
Summarizing a list of goals	activity	Contracting	Contractor summarizes a list of all goals and forwards it to the data analysts
Checking if there are any important changes	activity	Finances	Upon receipt of new invoices, financier gets the sorted invoices and searches for possible changes
Are there any changes in invoices?	exclusive gateway	Finances	Financier checks the new invoices, and if financier doesn't find any changes the process ends
Stressing out all the invoice changes	activity	Finances	On the other hand, if he does find them, he stresses them out into IS

Source: own work.

3.2.6 Key findings and identification of potential improvements in the analyzed Data and reports preparation process

All elements, challenges' locations and findings for the analysed process are stated in the following paragraphs. For the Data and reports preparation process, firstly the challenges in the process and the company in general are stated. Challenges (problems) that could have the most impact if improved in the process of Data and reports preparation are:

- the roles of all process operators are not precisely defined, the role of data analyst is too broad and could be more defined in terms of sections of problem solving,
- accounting department does not have access to the first chunk of data, when it comes to new invoices and therefore has to wait until the data analyst finishes the process and updates the information in IS,
- process of contracting starts with weekly and annual inputs received in the form of the reports from the data analyst (output of the Data and reports preparation process). Once the documents containing information about the current partners and future possible partners (on all areas from cost minimizing, sponsorships, value providers to revenue earner partners) are received, the person in charge checks if there are any alarming warnings and all the time lost on waiting is a potential profit loss for the company,
- there is no need of asking a question of whether I am aiming to obtain a new partner (as an exclusive event), since it is always a goal (if a company has more options, better deals it can obtain),
- insufficient amount of data is prepared and provided as an output to sales supervision department, not enough clear data, which could be cleared automatically for the sales department, so that first the sales outliers are checked, then stressing out the importance of a question if any location had a significant change,
- data analyst might provide a wrong answer for the question of ‘Are the new data important?’.

4 SUGGESTIONS FOR BUSINESS PROCESSES IMPROVEMENTS IN THE SELECTED COMPANY

In the following subchapters TO-BE process models are prepared, from the analysis and measures described and discovered in previous chapter. Upon preparation of TO-BE process models I will focus on the suggestions for successfully implementing newly structured TO-BE business process models in the selected company. These suggestions will enable the company to implement the measures and changes in structured, logical and shortest way.

4.1 Preparation of TO-BE process models

Key findings in terms of measures and improvements that could resolve the mentioned problems are stated below for each of the processes.

4.1.1 Suggestions for improvements of the Procurement of goods process

List of measures that will resolve the abovementioned problems in the chapters related to Procurement of goods process problems (3.2.1 and 3.2.2) and consequently improve it are:

- more defined role of storage keeper, checking the number of received goods on delivery note and comparing it to the goods stated on the receipt,
- storage keeper could send the scanned delivery note to Data analysis department, that would update the IS with delivered goods data,
- automatized work of financial manager in terms of verifying the receipt, with automatically checking the received receipts and comparing it to established contracts,
- a manual could be created for most common cases, which would not eliminate, but would minimize the time required for order confirmation by financial manager,
- preparing a protocol and resolving the majority or all of decisions now performed by financial manager under reviewing the order requests (automatically comparing past month sales with the cost increases would eliminate majority of decisions),
- this is a challenge for the accounting and finances department, that could come up with a strategy for solving problem of payments being processed before the purchase order confirmation, as well as establishing additional competitive advantages with the usage and implementation of added paying methods,
- automatizing the checking system would resolve redundant work of the storage keeper, who now has to manually check if there is a shortage of products and eliminate the work of an employee on a location, which now has to make a list of missing products, manually compare and add up the counts of the products,
- with the establishment of department for goods procurement, upon establishing future process, a scenario for goods deliveries could look like: a certain product is missing in certain bar or is at a low level; department then automatically gets an order and product is delivered to the bar at the same day or the very next morning at the latest,
- loss of traffic in the waiting period would be eliminated with both establishment of the abovementioned department and with a second measure of storage keeper sending the scanned delivery note to data analysis department (with such up to date intel, financial manager could also make the decisions faster and therefore minimizing the waiting time for approval),
- employee at the bar not having time for inputting the data into IS could be solved with QR codes on delivery notes,
- storing the goods activity could be moved to an earlier extent and performed automatically upon arrival of goods, since it never comes to retrieving the goods, due to the nature of company's business and its size.

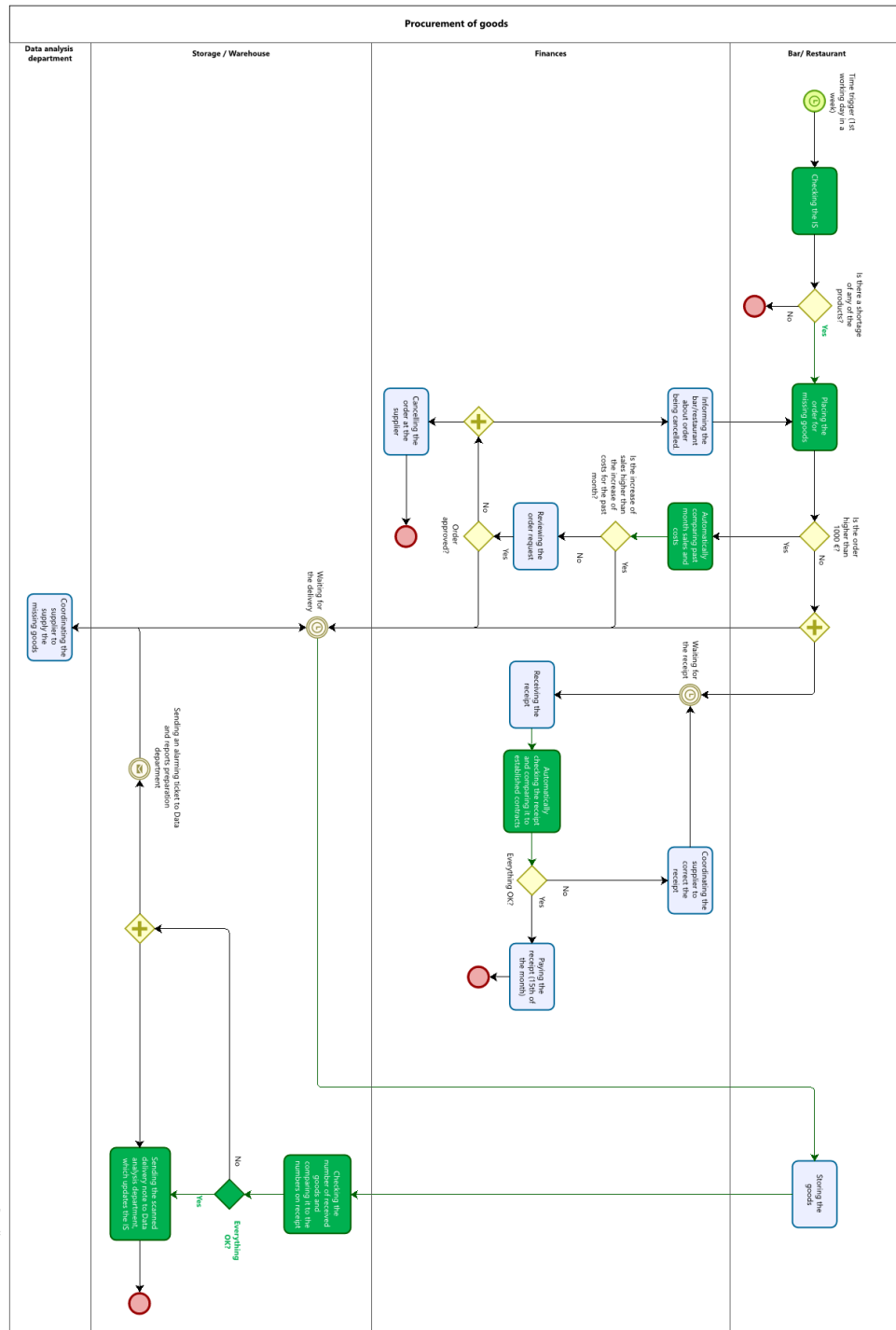
4.1.2 Changes to be implemented in Procurement of goods process

The detailed description of the process can be found in the chapter 2.6.1. (Procurement of goods). TO-BE model of Procurement of goods preparation was prepared based on the

evaluation of the description, the interviews and workshops performed in the analysed company. Upon reviewing the evaluations, suggestions for implementations are performed and TO-BE model is designed. TO-BE model of Procurement of goods is presented in figure 7. Changes to be performed are highlighted and stressed with the green colour and include:

- storage keeper sends the scanned delivery note to Data analysis department, which updates the IS with delivered goods data,
- activity of updating the IS with delivered goods data has been removed
- replacing the Verifying the delivered goods and documents with checking the number of received goods on delivery note and comparing it to the goods stated on the receipt (more defined role and more precise activity),
- changing the Verifying the receipt activity, previously performed by financial manager to automatically checking the received receipts and comparing it to established contracts,
- adding the activity of Automatically comparing past month sales and costs, with it eliminating the majority of decisions performed by financial manager,
- with automatizing the checking system, I remove the redundant work of the storage keeper, changing the activity of Checking the inventory to Checking the IS, removing the Preparing a list of all the missing products activity and simply placing the order for missing goods,
- this above mentioned second measure of storage keeper sending the scanned delivery note to data analysis department (with such up to date intel, financial manager could also make the decisions faster and therefore minimizing the waiting time for approval), was implemented in the new activity of Sending the scanned delivery note to Data analysis department, which updates the IS,
- Storing the goods activity moved to an earlier time.

Figure 7: Procurement of goods (TO-BE model)



Source: own work.

4.1.3 Suggestions for improvements of the Managing the finances process

List of improvements that will resolve the previously stated problems (in the chapters of 3.2.3 and 3.2.4) in the Managing the finances process are:

- implementation of additional payment methods and documents, forwarding the idea to managing the finances and business planning departments to perform analysis of additional profit gained from implementing such payments and additional costs occurring from the implementation of such payments and deciding upon profitability of implementing new methods of payments,
- in case of implementing new methods of payment, authorization for legal access to personal data of persons in individual sectors and customers should be implemented, especially the most necessary ones needed in order to process the payments,
- the inclusive gateway of 'Are there any requests from previous periods?' should be changed to exclusive and continue with, if yes: organizing a list of all past and current requests (data analyst), if no: remains the same. Then followed by 'Will requests be paid?' all of them happening in the department of data analysis, only after moving to finances department. Because in this way there is no duplication of activities,
- gateway 'Is there a data missing?' should be erased, since this element will remain active in the data analysis department under the gateway of 'Do requests include all of the necessary data for receipts being paid?',
- after the gateway of checking the increase of sales if it was higher than 20% in comparison to the one occurred in past months, I should add another one checking if the increase of sales higher than 20% occurred in other locations for that month comparison to past months; if yes continuing the process as is, if no sending the input to business planning department so they can further analyse and implement the newly set standards of costs and prepare additional changes, possibly change the prices of products,
- if one of the locations is performing above others (answer to the question of 'Is the increase of sales less than the compared costs?' is No; should be followed by the question of: Are others locations also performing this well? If yes, continuing the process, if no: sending an output to business planning department for further analysis and changes implementation.

Automatically sorting and answering the questions as soon as they are set into the IS would spare time, effort and money in the mentioned activities and new implementations could be:

- all single and occurring requests are automatically sorted, therefore saving time for the accountant,
- for all the single occurring costs all that are lower than 1000 € could be automatically approved and therefore sparing the time of the accountant, so he would only have to make decision about the ones higher than 1000 €,

- if the cost was not higher than 20% of an average monthly expense for an individual group, the request could be accepted automatically, again saving the time of the accountant,
- if the increase of sales was less than the compared costs could lead to automatic rejection of the request, with a mail written automatically with the rejection reason to the request maker,
- on the other hand, if the increase of sales was more than the compared costs could lead to automatic acceptance of the request and therefore removing the accountant from this last decision completely.

4.1.4 Changes to be performed in Managing the finances process

The detailed description of the process can be found in the chapter 2.4.2. (Managing the finances). TO-BE model of Managing the finances preparation was prepared based on the evaluation of the description, the interviews and workshops performed in the analysed company. Upon reviewing the evaluations, suggestions for implementations are performed and TO-BE model is designed. TO-BE model of Managing the finances is presented in figure 8. Changes to be performed are highlighted and stressed with the green colour and include:

- the inclusive gateway of ‘Are there any requests from previous periods?’ is removed and the activity of ‘Organizing a list of all current and past requests’ is now followed by an exclusive gateway of ‘Will requests be paid?’,
- organizing a list of all past and current requests (now not performed by a data analyst) is moved to an earlier stage,
- activity of Organizing a list of all current and past requests is now followed by ‘Will requests be paid?’ gateway, all of them happening in the department of data analysis, only after moving to finances department. Because in this way there is no duplication of activities (primarily Checking the requests activity),
- duplicated activity of ‘Checking the requests’ is removed from the Data analysis department, since it is already performed in the Finances department,
- gateway ‘Is there a data missing?’ is erased, since this element remains active in the data analysis department under the gateway of ‘Do requests include all of the necessary data for receipts being paid?’,
- after the gateway of ‘Checking the increase of sales if it was less than the compared costs in past months’ adding the activity of ‘Checking the sales on other locations’ and gateway of checking ‘if the increase of sales higher than 20% occurred in other locations as well?’, if yes continuing the process as is, if no sending the message to business planning department so they can further analyse and implement the newly set standards of costs and prepare additional changes, possibly change the prices of products. This way if one of the locations is performing above others (after answer to the question of ‘Is the increase of sales less than the compared costs?’ is No and input for business planning department is sent; should be

followed by the question of why are the others' locations not performing this well, which could be analysed in the business planning department and possibly copy the implementation of success,

- all single and occurring requests are automatically sorted, therefore saving time for the accountant,
- for all the single occurring costs: all that are lower than 1000 € are automatically approved and therefore sparing the time of the accountant, so he would only have to make decision about the ones higher than 1000 €, new activity of 'Checking the financing amount (sum) of sorted costs' (less than 1000 € are automatically accepted), therefore removing the 'Is the sum greater than 1000 €?' getaway,
- if the cost was not higher than 20% of an average monthly expense for an individual group, or if the increase of sales higher than 20% happened on other locations as well, the request is accepted automatically, again saving the time of the accountant,
- if the increase of sales was less than the compared costs, an automatically generated email with a rejection of the request, with the rejection explanation is sent to the request maker,
- if the increase of sales was more than the compared costs leads to automatic acceptance of the request, with the newly established activity before it, which therefore removes the accountant from this last decision completely,
- eliminating the 'Are there any requests from the previous periods?' getaway and 'Organizing all of the received requests for receipt payment', due to the duplication of activities.

Source: own work.



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4.1.5 Suggestions for improvements of the Data and reports preparation process

Below I will concentrate on the improvements of Data and reports preparation, based on the problems I have located, analysed and described in the previous chapters (3.2.5 and 3.2.6).

List of improvements that will resolve these challenges and make the process more effective are:

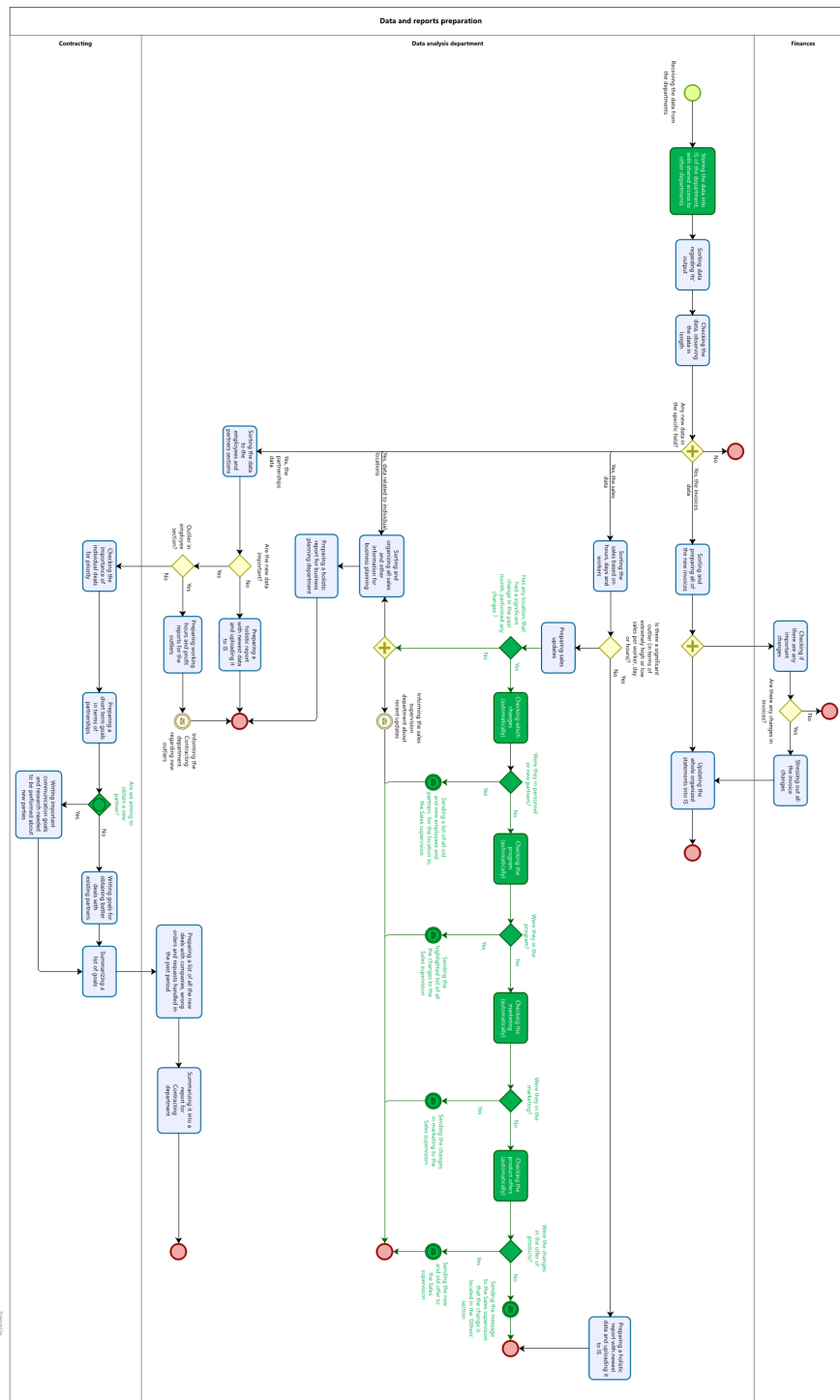
- the roles of data analysts could be divided into: invoices data analyst, sales data analyst, individual locations or business data analyst and partnerships data analyst,
- I would suggest giving the access to the first chunk of data to the accounting department and therefore, possible options are: leaving out this part from the data analysis department and saving the company time and money in preparing all of this data, basically outsourcing the data gathering with some trust and contract to the accounting company or keeping the accounting department (part of the company) in loop from the first step of receiving data (invoices), that way they can have real time access to information like receipt addressee is ,
- similar to the suggestion above, contracting department should get a real time update even while the data is preparing, not to oversee the data analysts work, but simply to have access to a daily updated data in case a crucial information is being processed by a data analyst,
- changing the gateway of the obtaining a new partner from exclusive to inclusive and performing further activities either way,
- would suggest making clearer data, automatically for the sales department, so that first the sales outliers are checked, then answering the question if any location that had a significant change (improved managing the finances process) has performed any changes in the past month? If yes, were they in personnel or new partners? If yes: sending the list of old and new employees and partners. If no: were they in program making? If yes: sending the highlighted list of all the changes in program. If no: were they in marketing? If yes: sending the changes in marketing. If no: were they in the offer of products? If yes: sending the new and old offer. If no: sending the message that change is located in the others section and completing the process,
- moving this decision making and gateway of ‘Are the new data important?’ to the contracting department, since the contractors have more experience in the field and could make better decisions.

4.1.6 Changes to be performed in Data and reports preparation process

The detailed description of the process can be found in the chapter 2.6.2. (Data and reports preparation). TO-BE model of Data and reports preparation was prepared based on the evaluation of the description, the interviews and workshops performed in the analysed company. Upon reviewing the evaluations, suggestions for implementations are performed and TO-BE model is designed. TO-BE model of Data and reports preparation is presented in figure 9. Changes to be performed are highlighted and stressed with the green colour and include:

- changing the first activity from Storing the data into IS of the department to ‘Storing the data into IS of the department, with shared access to other departments’ because of the second and third suggestion relating to the data access,
- the data is made clearer, automatically for the sales department, so that first the sales outliers are checked, then answering the added question of ‘Has any location, that had a significant change in the past month, performed any changes?’. If yes, were they in personnel or new partners? If yes: sending the list of old and new employees and partners. If no: were they in program making? If yes: sending the highlighted list of all the changes in program. If no: were they in marketing? If yes: sending the changes in marketing. If no: were they in the offer of products? If yes: sending the new and old offer. If no: sending the message that change is located in the others section and completing the process. All these additional data filtering and checking could mean a substantial increase of sales across all locations, with each of this crucial info located automatically and pinned to one of the sections (partners, program, marketing or product offers),
- decision making and gateway of ‘Are the new data important?’ is moved to the contracting department, since the contractors have more experience in the field and could make better decisions,
- the gateway of ‘Are I aiming to obtain a new partner?’ is changed from exclusive to inclusive and performing further activities either way, in this way not forgetting on the existing partners.

Figure 9: Data and reports preparation (TO-BE model)



Source: own work.

4.2 Suggestions for the implementation of TO-BE business processes in selected company

Firstly, the implementation suggestions are divided into three categories, regarding the necessity and urgency for their implementation in comparison to the costs and effort required for each of the implementations. Therefore, I start with the first category of the most necessary suggestions for implementations, that require the least in terms of costs as well.

The implementations that should be implemented first

For the Procurement of goods process these are: implementation of sending the scanned delivery note from the storage keeper (this one later relates to Checking the IS activity), removing the activity of updating the IS with delivered goods data, adding the activity of ‘Automatically comparing past month sales and costs’, which similarly to previous ones is a relative low expense and saves huge amounts of time for the financial manager and lastly ‘Storing the goods’ activity is moved to an earlier time, which enables the bars and restaurants to have products in stock sooner and therefore to sell them sooner, which brings additional profit to the company.

For the Managing the finances process the most necessary implementation includes: removal of the verification whether there are any requests from previous periods, as this decision is not efficient due to the duplication of activities, time it takes to perform it in comparison to the minimum if any additional value it adds. Point of the change is to minimize the time of the process and to eliminate the unnecessary activity, which costs the company significant amount in terms of time and money required for the salaries of the people checking the past requests. With the elimination of this getaway is to achieve different and more efficient way of performing business, saving the company time with not performing the described activity.

Next, activity of ‘Organizing a list of all current and past requests’ should be followed by the decision whether these requests will be paid as it would shorten the time of the whole process, efficiently confirming or declining the necessary receipts in need of confirmation, allowing the company easier and quicker way in business dealing on a daily basis, thus the getaway ‘Will requests be paid’ has been added to the TO-BE model. Furthermore, as it is not efficient to have duplicated activities in the process, activity ‘Checking the requests’ will no longer be performed in the Data analysis department, because it is already performed by the more adequate employee, i.e., financier in the Finances department. Gateway ‘Is there a data missing?’ is also erased, since it is performed by the data analyst and all the single occurring costs that are lower than 1000 € are automatically approved and therefore sparing the time of the accountant and eliminating the ‘Are there any requests from the previous periods?’ getaway. ‘Organizing all of the received requests for receipt payment’, is also removed from the TO-BE model due to the duplication of activities. These changes are to be achieved with the elimination of duplicating activities;

automatically approved questions are to be programmed through simple formulas of automatically checking (i.e., if it is lower than 1000 € then accept it). With such automation the company would spare enormous funds in terms of time, employee costs and not making the mistakes due to the human factor.

The most urgent and necessary transformations regarding the Data and reports preparation process are: changing the first activity from Storing the data into IS of the department to 'Storing the data into IS of the department, with shared access to other departments' and changing the gateway of 'Are I aiming to obtain a new partner?' from exclusive to inclusive. First change is important because of the data sharing, resulting in time and cost effectiveness. In this way the employees in other departments will improve their decision making, with having the data available in real time, when they are in need of it. With the change of the gateway to inclusive the employee now does not choose between obtaining a new partner or serving the old ones, instead he or she performs both activities, which ultimately results in company's increase in current and future relations, consequently increasing the profit of the company. This is to be implemented with a change in procedures and new instructions handed to the employee in charge.

The implementations that should be implemented in the near future

Secondly, I focus on to the implementations that are almost the same in the terms of necessity as the first ones, just that they carry higher expenses and effort, which allocates them to this second category of implementations, that are to be performed in a stage two of implementations.

For the Procurement of goods process these are: replacing the 'Verifying the delivered goods and documents' with 'Checking the number of received goods on delivery note and comparing it to the goods stated on the receipt', which is very important, but carries relatively higher cost and more important requires more time for the successful implementation and changing the 'Verifying the receipt activity', previously performed by financial manager to 'Automatically checking the received receipts and comparing it to established contracts', which carries higher expense for the implementation, but saves a significant amount of time in the future perpetuity. Higher cost it carries is allocated to designing and programming a system, that would compare the numbers of received goods to the ones stated on paper and that would check the prices on contracts with the ones on the receipts. The high amount of cost necessary for the implementation is easily justifiable with the amount of time it saves and the number errors, such system would prevent.

As for Managing the finances process the suggested implementations are: 'Organizing a list of all past and current requests' is moved to an earlier stage, all single and occurring requests are automatically sorted, therefore saving time for the accountant, implementation of automatic

acceptation of the request if the increase of sales was more than the compared costs. With the movement of mentioned activity to an earlier stage, the company receives all of the requests sooner and thereby shortening the waiting time. With the simple sorting function and implementation of automatic acceptations (again are to be programmed) the waiting time is minimized even further and employee's work made easier.

For the Data and reports preparation process changes should result in moving the decision making and gateway of 'Are the new data important?' to the contracting department. This simple change of departments i.e., roles of the employees performing the activities are contributing the company significantly, since the contractors or contracting manager could perform more accurate and more valued decisions in comparison to data analysts.

Implementations that are less pressing

Lastly, the category of implementations that are less pressing includes the changes, that require a significant amount of time, finances and or are not that important to be implemented in the short run. Ones related to Procurement of goods process are: removing the redundant work of the storage keeper, changing the activity of 'Checking the inventory' to 'Checking the IS'. With the implementation of changes in stage two (with programming and automatically checking) could now make the work of storage keeper also easier, with the help from the new data from IS.

Removing the 'Preparing a list of all the missing products' activity and simply placing the order for missing goods and above mentioned second measure of storage keeper sending the scanned delivery note to data analysis department (with such up to date intel, financial manager can be educated and prepared (with the simple know how in reading the data from the IS) now to make the decisions faster and therefore minimizing the waiting time for approval).

Ones related to Managing the finances process include: adding the activity of 'Checking the sales on other locations and getaway of checking 'Did the increase of sales higher than 20% occurred in other locations as well?', automatically accepting the request if the cost was not higher than 20% of an average monthly expense for an individual group, or if the increase of sales higher than 20% happened on other locations as well. Similarly, to changes in stage 2 with the programming of a new sorting system and implementation of an automatically generated emails with a rejection of the request if the increase of sales was less than the compared costs, the new process would save time and expense in terms of employee's work (in changed version, computer would perform significant amount of work).

Eliminating the 'Are there any requests from the previous periods?' getaway and 'Organizing all of the received requests for receipt payment', due to the duplication of activities would additionally minimize the time and effort required to perform the process.

Lastly, the ones related to Data and reports preparation process include changes to be made for making the data clearer, automatically for the sales department. From checking the sales outliers to tracking changes in different locations (personnel, partners, program, marketing, product offers). All these additional data filtering and checking could mean a substantial increase of sales across all locations. On the bad side, these changes require substantial amounts of programming and need majority of changes described above to be executed, before the implementation of this change.

To sum up, the first category of changes is to be implemented first as the most urgent one in the ways described above. With the implementation of first category of changes the company will be able to upgrade the processes and profits to the extent of being able to start implementing the second category of changes and lastly, the third one. Many of the changes are connected among each other, which is also the reason why first category is to be implemented as first one. Ways of implementing are evident from the descriptions in this chapter and under the chapters of 4.1.2, 4.1.4 and 4.1.6. It would be crucial to coordinate these changes with top managers of the firm, as well as with the employees that are most influenced by them in order to have the most successful transition of the company's processes.

5 CONCLUSION

As evident from the theoretical part of this master's thesis, success of the company is correlated to the practice of BPM and knowledge management (Fanbo, Minli & Wuliang, 2010). By jointly applying information technology and people's knowledge, it is possible to realize a knowledge management system that completely changes the way employees work, with each worker becoming a knowledge worker who participates in the creation, sharing, application and evaluation of knowledge. Knowledge management in organizations, in addition to creating more motivated employees, also leads to greater availability of expert knowledge and to a faster and better resolution of customer requirements (Jeston, 2018).

The purpose of this work was to provide an insight into BPR and propose improvements of the currently established business processes in the chosen company, in order to optimize its business performance. Additionally, improvements could provide more success to the analysed company. The long-term success of the selected company is largely dependent on the quality of BPM. BPM and suggested changes could improve the competitiveness and degree of innovation of the company and lead to faster and more flexible company responses to changing market conditions. The implementation of appropriate changes is crucial for creating process orientation and therefore the real value of information technology depends on the way it supports business processes, knowledge management and BPM leading to significant organizational benefits. The purpose was achieved partly in the theoretical part, where a detailed insights into BPR has been

given and partly in the empirical part, where selected company processes have first been identified and then the selected ones have been thoroughly analysed using BPMo approach. Furthermore, suggestions for the implementations of the proposed changes to selected models have been provided. Also, goals set in my Master's Thesis have been achieved. Achieved goals include successful analysis of the company, followed by suggestions and plans for business processes optimization, which were appropriately achieved in this work. These goals were achieved through in-depth research, analysis, observations, with the help of literature, company analysed and other results obtained and produced during this work.

I believe that findings and research performed during the work can enable better processes and increases in profit as for the analyzed company as for the other potential companies, residing in the same sector. Suggestions for implementations, along with the descriptions and insights supporting them, can provide significant advancements and improvements of company's processes. Consequently, could the company achieve greater results with the successful implementation of each additional category of changes.

In my master's thesis I came to the following main findings contributing to reaching proposed goals and achieving the purpose of my master's thesis:

- the implemented TO-BE solutions contribute to business processes enhancement, increasing company's profit by decreasing time for many activities, performed today, minimizing the current work for some of the employees, which makes additional space for additional value added and future improvements,
- Procurement of goods process is the one process that requires the change the most and therefore has most space for improvements,
- company's outdatedness in many forms has its weaknesses, which present the opportunity for change and improvement of everyday business processes,
- the possibility of modernizing some elements of the business processes (including technical advancements as IS modernization, placement and inclusion of filtering) can lead to significant results, minimization of enormous amount of time and costs,
- enabling the employee's additional features could not only lead to advancement of company's processes, but to their own personal ones as well (increasing personal competencies as a result of modernization, implementation of changed processes),
- many changes and improvements could be found, when analyzing the same situations more than once, which is also a suggestion for tracking the implementation of improvements,
- in order to achieve the best results: developed TO-BE processes must always be created and adapted, so they would suit the specifically analyzed business processes the most.

5.1 Contributions to the body of knowledge

A review of the literature presenting the field of BPM was performed, mainly from the point of view of modeling and improving business processes, and can thus serve as a starting point for further research in the mentioned field. Companies can utilize this master's thesis when they decide to renovate or optimize their processes, as this work first describes how this is performed in theory and then demonstrates this on a practical example, and thus the master thesis can serve as an example of good practice.

All analysed processes are providing certain degree of efficiency for the analysed company and could be improved with suggested improvements. Through keen observations, analysis and information gathering I managed to discover how can these processes be improved and result in better efficiency and additional time and cost minimization for the selected company. Even higher motive was to present the whole activity and improvements as a guidance for other companies and a way of improving processes in other similar companies of the same size and or structure, with the purpose of helping not only the selected company but other similar minded businesses as well in achieving higher efficiency with their processes.

Other contributions to the body of knowledge include development of unique solutions for optimizing companies' processes in the analyzed sector. The companies may also recognize additional value in additional profit streams, upon the implementation of some or majority of the suggestions for processes optimization. This could result in overcoming the limitations and obstacles for future research, which is further described in the following chapter.

5.2 Limitations and avenues for future research

I was limited in my research by several circumstances. Firstly, the selected company's time and resources available for use were limited. Meaning that their flexibility, access to all data and time all the employees reserved for the research was limited, obstacles of their own obligations for the company made the coordination and research especially difficult.

Secondly, the approach used in this work was adapted to optimize processes in the HoReCa sector, which needs to be considered in the generalization of results or. applications of the approach to other areas and sectors. It is important to indicate the research was focusing and concentrating on the selected company. Therefore, the success of the implementations, suggestions and results are to be reevaluated before implementing similar measures to different companies, which could yield different outcomes. Like mentioned, important limitation lies in the sector the company is situated, meaning that outside of HoReCa section implications of similar changes and implementations could lead to different results. Few of the suggestions could be implicated to other companies in general and some to other companies in the analyzed

sector. Furthermore, even for the companies in HoReCa section it would be necessary to evaluate implementations for each individual entity and create a solution that best suits the needs of the analysed company.

There are several possible further researches in the researched field and in relation to the work. These include further researches for tracking the changes in the analyzed company and therefore preparing a tracking and post implementation studies for each of the three categories described in the 4.2. chapter. For the future research, it is important to stress out the company's lack of resources in investing and implementing all of the analyzed and proposed changes. This lack of resources applies to time, money, infrastructure and human resources needed for further research and extension on optimizations suggested in this work.

Regarding future research and its correlation to scientific findings, the applied approaches could be verified in another practical case, so the results can be compared and correlations made between the findings of both cases. That is to be performed after the implementation in analysed company is completed. It would be useful to compare the situation before and after the introduction from different perspectives, e.g., saving time, costs, etc. It would also be meaningful to observe and to measure how the transition to a new way of doing business went and how smoothly was the implementation of changes in processes selected to be changed and optimized.

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APPENDIX

Appendix 1: Povzetek (Summary in Slovene language)

V magistrski nalogi je raziskan pomen BPM za podjetja ter kako omogoča nenehno izboljševanje poslovnih procesov na podlagi meritev rezultatov uspešnosti že obstoječih procesov. Optimizacija tovrstnih poslovnih procesov je na področju poslovne informatike pomembna, saj lahko pospeši delo, poveča notranjo urejenost, zniža stroške in nudi podporo podjetju s povečanjem kakovosti njihovih izdelkov/storitev ter celotnega delovanja in znanja organizacije.

Namen magistrskega dela je podati vpogled v BPR in predlagati izboljšave trenutno vzpostavljenih poslovnih procesov v izbranem podjetju z namenom optimizacije njegovega poslovanja. Da bi to dosegli, je potrebno raziskovanje obstoječih tehnik modeliranja in pristopov prenove. Nato sledi identifikacija obstoječih poslovnih procesov, ki potekajo v tem konkretnem podjetju in njihova analiza.

Cilji, doseženi v magistrski nalogi, so: predstavitev prednosti BPR za podjetja, identifikacija in predstavitev obstoječih pristopov in tehnik BPMo ter identifikacija poslovnih procesov znotraj izbranega podjetja, ki jih je potrebno prenoviti. Poleg tega realizirani cilji vključujejo pripravo AS-IS modelov poslovnih procesov v izbranem podjetju, pripravo TO-BE modelov poslovnih procesov v izbranem podjetju in pripravo predlogov za implementacijo TO-BE poslovnih procesov v izbranem podjetju.

Po izboru specifičnih procesov, ki jih je na podlagi pregleda literature potrebno preurediti, se pripravijo procesni modeli AS-IS. Sledi analiza obstoječih procesov in izdelava procesnih modelov TO-BE ter akcijski načrt implementacije predlaganih izboljšav poslovnih procesov v vsakodnevno poslovanje v izbranem podjetju. Te ugotovitve so pomembne za izboljšanje procesov tako v podjetju kot v podobnih podjetjih v analiziranem HoReCa sektorju.