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Developing a Framework for Business Process Optimization: A Case Study of Eesti Energia

Master's thesis

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Äriprotsesside optimeerimise raamistiku väljatöötamine: Eesti Energia näitel

Magistritöö

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Author’s declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

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Abstract

The main goal of this thesis is to create a universal framework for analyzing and optimizing business process related to IT customer support business process. At the moment, all actions in the process that will be improved in the course of this work were done through Excel. This caused the team a lot of inconvenience because there were numerous errors such as solving one request with two or more people, constant missing dates, and it was impossible to track the progress of any request.

At the moment there are already business process optimization techniques such as business process reengineering (BPR), Business process improvement (BPI), Business process management (BPM), but their main problem is that they say may not be an ideal fit for every business process because they have limitations, such as they tend to limit innovations due to its highly rigid framework and its structure does not allow flexibility for employees to work on solutions in whatever way they deem fit.

In order to achieve the objectives that were set in the thesis, research was conducted in the field of scientific literature related to the process conducted a theoretical analysis of other frameworks that could be suitable for the redundant problem and also made a review of already existing solutions in order to emphasize the best practices.

The result of the study will be a business process modified with the help of the framework. The framework created with the help of various techniques will be fully tested on the process from start to finish.

The result of the thesis has been checked against the criteria which were compiled by the thesis author and evaluated with the help of consultation with experts. Interviews were also conducted with the employees involved in the process to find out how much things had changed for them and to find out whether the improvements were positive or not.

This thesis is written in English and is 98 pages long, including 9 chapters, 19 figures and 4 tables.

Annotatsioon

Äriprotsesside optimeerimise raamistiku väljatöötamine Eesti Energia AS-i näitel

Käesoleva lõputöö peamine eesmärk on luua universaalne raamistik IT-klienditoe äriprotsessiga seotud äriprotsessi analüüsimiseks ja optimeerimiseks. Hetkel on kõik tegevused protsessis, mida käesoleva töö käigus parandatakse, tehtud Exceli abil. See tekitas meeskonnale palju ebamugavusi, sest tekkis palju vigu, näiteks ühe taotluse lahendamine kahe või enama inimesega, pidevad puuduolevad kuupäevad ja ühegi taotluse edenemist ei olnud võimalik jälgida.

Praegu on juba olemas äriprotsesside optimeerimise meetodid, nagu äriprotsesside ümberkujundamine (BPR), äriprotsesside täiustamine (BPI), äriprotsesside juhtimine (BPM), kuid nende peamine probleem on see, et nad ütlevad, et ei pruugi sobida ideaalselt iga äriprotsessi jaoks, sest neil on piirangud, näiteks kipuvad nad piirama uuendusi selle väga jäiga raamistiku tõttu ja selle struktuur ei võimalda töötajatele paindlikkust töötada lahenduste kallal, mida nad ise sobivaks peavad.

Selleks, et saavutada eesmärgid, mis olid seatud lõputöö, uuriti valdkonnas teaduskirjanduse seotud protsessi läbi teoreetiline analüüs teiste raamistike, mis võiks olla sobivad koondamise probleem ja ka tehtud ülevaade juba olemasolevate lahenduste, et rõhutada parimaid tavasid.

Uuringu tulemuseks on raamistiku abil modifitseeritud äriprotsess. Erinevate tehnikate abil loodud raamistikku testitakse täielikult protsessi algusest lõpuni.

Lõputöö tulemust on kontrollitud kriteeriumide alusel, mis on koostatud lõputöö autori poolt ja mida on hinnatud ekspertidega konsulteerides. Samuti viidi läbi intervjuud protsessis osalenud töötajatega, et selgitada välja, kui palju on asjad nende jaoks muutunud ja kas parandused on olnud positiivsed või mitte.

Lõputöö on kirjutatud inglise keeles ning sisaldab teksti 98 leheküljel, 9 peatükki, 19 joonist, 4 tabelit.

List of abbreviations and terms

BPI	Business Process Improvement; *Äriprotsessi parandamine*
BPM	Business Process Management; *Äriprotsessi juhtimine*
BPR	Business Process Reengineering; *Äriprotsessi ümberkujundamine*
BVA	Business Value Added; *Lisatud äriline väärtus*
CI	Continuous Improvement; *Pidev täiustamine*
DMAIC	Define, Measure, Analyze, Improve, Control; *Defineeri, Mõõda, Analüüsi, Paranda, Kontrolli*
IEEE	Institute of Electrical and Electronics Engineers; *Elektri- ja Elektroonikainseneride Instituut*
IT	Information Technology; *Infotehnoloogia*
KPI	Key Performance Indicator; *Peamine tulemusnäitaja*
NVA	Non-Value Added; *Mittetulunduslik lisaväärtus*
PDCA	Plan, Do, Check, Act; *Planeeri, Tee, Kontrolli, Tegutse*
RVA	Real Value Added; *Tegelik lisandväärtus*
SLA	Service Level Agreement; *Teenuse taseme kokkulepe*
SRE	Site Reliability Engineer;
SWOT	Strengths, Weaknesses, Opportunities, Threats; *Tugevused, Nõrkused, Võimalused, Ohud*
TMQ	Total Quality Management; *Täielik kvaliteedijuhtimine*

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1 Introduction

In the world of emerging technological advancement, penetration of information technology (IT) into the organizations is rapidly increasing. Adoption of IT in core organizational processes is becoming inextricably interwoven in performing everyday activities [1]. To be a truly world-class organization, the company needs to work as a team and all the functional areas of the business need to be properly integrated, with each understanding the importance of cross functional processes. As the basis of competition changes from cost and quality to flexibility and responsiveness, the value of process management is now being recognized. [2]

The backbone of any company is always processes. Whether it is the process of solving customer requests or the process of taking an order and delivering it. Processes have always been at the heart of any business of any size. In order for the processes to be well defined and the people who work on them to understand them, it is necessary to maintain them. With many industries and technologies evolving rapidly, it is necessary for processes to always keep up with the times for the best results. In the case of large companies, where there may be over 100 different processes, there are special people - process managers - to maintain their state. But sometimes even they don't have a ready-made framework for some process with the help of which the process could be improved. In the case of this thesis, it is about Eesti Energia AS.

Eesti Energia is an international energy company. Eesti Energia's mission – “All our energy for the benefit of people!” [3]. Eesti Energia provides useful and convenient energy solutions and produce energy in an increasingly environmentally friendly way. Eesti Energia's home market stretches from Finland to Poland. Eesti Energia believes that electrification based on green electricity is the fastest, cheapest and most environmentally friendly way to a carbon-neutral economic model. As experts in the field of energy, Eesti Energia helps customers plan their green journey in a personal and flexible manner as well as implement it by using environmentally friendly energy solutions. [3]

Eesti Energia AS has various processes in many different areas. These processes range from standard IT processes to complex and complex business processes involving several stages, such as the process of delivering electricity to the customer.

Eesti Energia AS already has a process manager, who is also responsible for familiarizing the staff with the new procedures and any changes. During the research, the author of this thesis asked several process managers for help and their opinions are presented in the thesis as expert opinions.

The success of most of today's businesses is tied to the efficiency of their core processes. Yet, two major challenges often prevent optimal processes: First, the analysis techniques applied during the optimization are inadequate and fail to include all relevant data sources. Second, the success depends on the abilities of the individual analysts to spot the right designs amongst a plethora of choices. [4]

In the case of Eesti Energia AS, the creation of such a framework is a necessity, as the number of projects that could use it is only increasing over time. This year alone, Eesti Energia AS has already received 3 such projects for which there is simply no framework for improvements. The problem is that often for some processes there is no ready-made frameworks that are already implemented in work for analysis and optimization and it is necessary to use frameworks that provide general information without any specificity that might be useful for the process.

1.1 Task Setting

To solve the problem due to the lack of a framework for analyzing and optimizing the process, the author of this thesis decided to create his own framework, based on which it will be possible to optimize the business process of communicating with customers through Jira and Confluence. In order to create a framework, it will be necessary to perform a review of scientific literature, interview experts in the form of a process managers, and a survey of employees that will be used to improve the process and framework.

Within the scope of this thesis, the author of the thesis set out to find answers to the following research questions:

1. Is it possible to create a universal business process analysis and optimization framework for Service Desk projects?

The main purpose of this thesis is to create the framework and answer the questions that have been posed. Based on the answers to these questions, the author of the thesis will be able to improve and accelerate the analysis and optimization of such business processes.

Ultimately, the preferred outcome of this thesis is that there will be a fully working universal framework that will help the process to become better, as well as improve key process metrics and indicators.

1.2 Research Methodology

This research work is based on analyzing scientific literature, using best practices, interview with experts and their opinions and surveying future users. The scientific literature is based on the articles on analysis and optimization of business processes, which, in the opinion of the author of the thesis, best suited the enterprise. Data from different sources will help to better understand situations and also learn more about the research done in this area. This data will be used to compile the main part of the framework and its "skeleton".

Moreover, different existing frameworks, which have been tested for many years and which have proved to be quite reliable, will be taken into consideration. Based on the findings, it will be possible to draw insights from best practices that have been tested more than once and use them to create a framework. The experts' opinions will be obtained through interviews. To be more precise, the expert opinion was used more for consultation to make sure that the framework was evolving in the right direction. The experts will be 2 process managers from Eesti Energia, who have extensive experience in business process optimization and analysis area.

In order to achieve the objectives of this thesis, all the knowledge obtained from different sources will be utilized. All data will be documented in order to achieve the best possible results and will be made available in the form of publicly accessible documentation for Eesti Energia employees.

In the last part of this thesis, the author of the thesis will add the results of the interview with the experts and the results of the user survey.

1.3 Overview of work

The thesis is divided into 4 main sections.

The first section is an introductory section that describes the general situation of the limitations of the author's motivation and the role of the author and is followed by a description of the methodologies that were used in the course of the work to solve the problems posed.

The second section of the thesis is devoted to the creation of a new framework to improve and optimize a process that is already outdated and no longer works effectively. The creation of the framework is described in detail and supported by various sources and data that were obtained in the methodology section. The result of this section is a newly created framework that will be used in the future work.

The third section consists in the fact that there is a specific revision of the process on the basis of the newly created framework and immediately goes to the application of this framework with a detailed description of what and where it was done and how. At the end of this section, it will be possible to look at the finished process with the applied framework and evaluate its efficiency.

The fourth section consists in analyzing and confirming the results obtained. The result of this section should be that the results obtained in the course of work will be confirmed or refuted and the root causes of why it turned out this way or that way.

2 Problem overview and formulation of the assignment

This chapter outlines the main issues addressed by the research and explains the limitations of the study as well as the scope of the work. In addition, the author's contributions to the study are described in detail for better understanding.

2.1 General overview

Today, every organization must be able to adapt more and more quickly to strategic and technical changes. To do this, it must be able to identify, model, design, execute, optimize and evolve its business processes according to these changes. Hence the notion of flexible organizations, capable of aligning their processes in real time with user needs while respecting environmental constraints and considering organizational and technological changes. The challenge of business process management is therefore to introduce a process of continuous evolution and improvement, and to improve the satisfaction of internal and external stakeholders in organizations. [5]

This thesis will look at a LTT project that deals with solving customer and partner requests. The LTT team consists of two parts - a call center that registers requests and employees who solve these requests. The project was created quite a long time ago and still operates on a "business as usual" basis, i.e. LTT team did not use any technology and most of their work was manual. When the inefficiency of the process and the number of errors reached its peak, it was decided to change the process using modern solution technologies and also provided with more automation in order to reduce the manual tasks of employees and also to increase efficiency. This is currently the third such project that will move from Excel to Jira and Confluence and that needs optimized improvements, but has no framework on which to base these improvements. As a result, the list of problems that will need to be solved as this paper is written is as follows:

- Problem of limited functionality in Excel (e.g. lack of email notifications)

- Lack of automation - Excel lacks any automation, all actions such as sending emails, filling in fields and changing request statuses have to be done manually, which takes a lot of time.

- Risk of data loss due to human error since the data is always entered manually, the chances of an error on the part of the assignee are quite high. Thus, at the time of using Excel, the percent of the errors were about 4 out of 10 – 40%, which means that 4 requests out of 10 were missing some information or contained an error.

- The need to create reports manually in order to keep track of request statistics. The LTT team manager had to manually collect data from Excel and then compile reports from it.

- Inconvenient search for duplicates and filtering of data. Call center employees spent a lot of resources and time to check already registered requests because the Excel search was manual and they had to make sure that the request was not already registered.

It is important to keep in mind that analyzing and optimizing business processes has always been a challenging endeavor. Many methods and practices have been developed to make it easier and more understandable, such as business process reengineering (BPR), Business process improvement (BPI), Business process management (BPM). It should be noted, however, that these are merely recommendations based on the experience of others. Repetition does not guarantee success or improved optimization of the process; indeed, it may have the opposite effect and worsen matters. To achieve greater consistency in results, the author of this thesis believes that universal and appropriate tools are needed.

A significant issue is that in companies many processes remain unchanged from their original creation despite existing for a long time. However, now the advancements in technology have allowed for the digitalization of many processes that were once paper-based.

For example, old technologies had a particularly significant impact on business processes that require human interaction. In the past, communicating and confirming order details would have required lengthy email correspondence or phone calls. However, modern

technology has made it possible to send detailed letters quickly and efficiently with just a few clicks of the mouse.

The author of this thesis believes that timely updating of any business processes is a necessity for any existing business.

2.2 Work's scope and limitations

This thesis focuses entirely on the analysis and optimization of business processes that are specifically related to the project on which this thesis is based. In this case it is a business process that is very closely related to the IT process. All possible improvements and unexpected circumstances directly related to the project and the process will be taken into account.

The use of tools other than Jira and Confluence to solve the problem is not covered in the study. This also means, that no comparisons will be made with other tools that have similar functionality. Moreover, the author of the study will not use them to answer the research questions or solve the problem posed in the thesis.

2.3 Author's motivation

The author felt the first need to create this framework when similar projects started to come to Eesti Energia AS quite a lot. Since there was a need to create such a solution for the company and ready-made solutions were not suitable, the author of this thesis took on the role of a framework creator.

In case of this thesis, the framework will be created not specifically for this project, but for similar projects that want to move to Jira and Confluence. For example, Eesti Energia AS alone has received 3 similar requests to move their activities to Jira and Confluence this year. In order not to analyze and optimize each of these projects separately, framework will be made that will be applicable in these cases for more convenient and faster adaptation of projects to Jira and Confluence.

It can be said, "it's enough to just move everything to JIRA and Confluence and hand it over to the users after training." Unfortunately, this is not enough. In the same case, the process will remain unoptimized, the performance of the employees will not be improved

and no significant results will be achieved. If people receive the tools, nothing will change because they don't know how to use it properly and don't know what the tools can actually do. To achieve the results, it is important to introduce metrics that can be tracked. With the help of metrics, it will be possible to track the weakest points of the project as well as the framework and improve them on that basis.

2.4 Author's role

The author of the work performed the role of Site Reliability Engineer (SRE) who performed all the operations to create and configure the required amongst in Jira and Confluence. The author of the thesis analyzed the situation and offered help with business process that involves transferring the whole activity from Excel to Jira and Confluence. Also, the author of the thesis has identified the most suitable frameworks for optimizing this business process which have been used in the work.

Furthermore, the author of the thesis has performed a role in the process manager within which the author of the thesis has created a framework on the basis of which the improvement of the process mentioned in this thesis will be carried out as well as the improvement of all subsequent similar processes that will want to use Jira and Confluence as a foundation.

The Jira TEST and Confluence TEST environments were created by other Atlassian Team members who are responsible for Jira and Confluence work at Eesti Energia. Thanks to the encouragement and help from their side, the author of the thesis was able to achieve significant results and quite quickly. In the test environments, end-user tests were conducted on the basis of which the process was improved.

In collaboration with the product owner of Jira and Confluence products and all Atlassian Team members, training materials on basic functions of Jira and Confluence were made, which will be given to each project participant for familiarization.

3 Methodology

This chapter of the thesis is entirely devoted to the research methodology that has been used in the work. In purpose of solving the problem and achieving results with the research questions that have been posed in the thesis, it was decided to use the most appropriate methods for research and solving the questions that have been posed in the thesis.

Scientific literature reviews are utilized to help build knowledge, identify gaps, and to draw out concepts to frame a field so as to inform research questions and judge research outcomes. Most literature reviews in social sciences are ‘narrative’ reviews, developing an overview of a field through a reasonably comprehensive assessment and critical reading of the literature [6]. A total of 102 number of articles from 2000 to 2023 were studied. Based on the knowledge gained from the scientific literature, gaps will be identified from which the current study will be able to fill them. [7]

Qualitative research - Interviews with experts for a better and more detailed understanding of the essence of the processes, qualitative interviews will be made with experienced process managers, where with the help of questions the author of the study will be able to better understand what nuances will be taken into account when analyzing and optimizing the process. [8], [9]

Quantitative research - Employers survey will reveal the side of the employees and will help to achieve better results. First of all, the actions in the process will be performed by people and in order to achieve the most optimized process, which will be convenient for people to use, quantitative research in the form of employee’s survey will be done, in which the employees will be able to point out the places for improvement in the process. [10], [11]

Employers study plan and materials play important role in this thesis and should be created. In order for new employees to be able to better adapt to the team and project training materials will be made to speed up the learning process. The study materials will be made based on the process and personal experience of the study author. [12]

Theoretical analysis will be also used as a part of the research. The purpose of the theoretical analysis is to look at the different methodologies and practices that fit the research topic, as well as those methodologies that were not included in the thesis with a rationale as to why they are not appropriate for the process and project.

Overview of already existing problem solutions will add more value to this thesis. By looking at already existing solutions to similar problems, the thesis writer will be able to identify their strengths and weaknesses that can be utilized in the research paper. The main purpose of this analysis is to analyze different options and techniques from other similar works.

3.1 Qualitative research

The author of this thesis has decided to perform qualitative research in order to get detailed ideas about modeling and process analysis. A well-developed interview protocol is an essential data collection tool in qualitative research. An established process to refine interview protocols can help build quality and consistency into data collection. [13]

3.1.1 Interviews with experts

An interview with experts is an excellent option for acquiring knowledge. Conducting expert interviews can serve to shorten time-consuming data gathering processes, particularly if the experts are seen as “crystallization points” for practical insider knowledge and are interviewed as surrogates for a wider circle of players. [14]

The author of the thesis decided to conduct qualitative research in the form of interviews with experts, in which experts shared their experience in analyzing and optimizing business processes. Since the selection of experts within the organization was rather limited, the author of the thesis decided to use Non-Probability Sampling Technique: purposive sampling. Purposive or judgmental sampling is a type of sampling that researcher’s use when they want to find people with certain traits that are important to the study. The reason for purposive sampling is the better matching of the sample to the aims and objectives of the research, thus improving the rigor of the study and trustworthiness of the data and results. [15]

The questions prepared by the author of this thesis are based on data from case study books that provide a guide for researchers in developing questions for the experts:

- What is the importance of business processes to the success of an organization? [8], [9]
- How often are business processes updated in your practice? [8], [9]
- How do you determine which business processes need improvement? [8], [9]
- How do you ensure that all stakeholders are involved in the modeling process? [8], [9]
- What tools and methodologies do you prefer for analyzing and optimizing business processes? [8], [9]
- What key performance indicators of business processes do you consider most important? [8], [9]
- What are the most common problems you encounter when analyzing business processes? [8], [9]
- What do you see as the main challenges to successful business process automation? [8], [9]
- What business process trends or innovations do you consider most important in the next few years? [8], [9]
- How do you assess the difficulty of implementing this framework in an organization? [8], [9]

With the assistance of answers to the questions received from the experts the author of the thesis will be able to significantly improve the framework. Moreover, using the data obtained about the possible future development of business process improvement techniques will be able to set the direction for the development of this framework in the next few years.

3.2 Quantitative research

A survey was used to collect quantitative data from process practitioners. Questionnaires were administered to gain an in-depth perspective and knowledge of how process experts conduct business process modelling and the tools used [16]. The data obtained from the survey will be used to improve the framework and workflow, as the people who will work with the system will be able to define the features they need, while the author of the thesis will help them with their implementation. In this way the process will become as efficient and convenient as possible for the people working on it.

Moreover, it was also determined to create training materials in the qualitative research chapter for new employees. These training materials helped people get up to speed faster and start working more efficiently and conveniently.

3.2.1 Employee survey

Does improving employee happiness affect customer outcomes? A large number of employers are increasingly claiming to care about how their employees feel at work and have begun to invest in management and organizational practices aimed at creating and maintaining a happier workforce. The list of questions that were asked to the workers after the implementation of the framework was as follows:

- How many percent did your productivity increase after implementing the new framework for work? [11], [17]
- What is your level of satisfaction with the new applications on a scale of 1 to 10? [11], [17]
- How would you rate the convenience of using the new applications on a scale of 1 to 10? [11], [17]
- How long did it take you to adapt to the new applications in days? [11], [17]
- What major advantages do you see in using the new applications – Jira and Confluence? [11], [17]
- What major disadvantages do you see in using the new applications – Jira and Confluence? [11], [17]

- Have you experienced any problems while using the new applications – Jira and Confluence? [11], [17]

- What additional features or capabilities would you see in the new applications – Jira and Confluence? [11], [17]

According to the author of the thesis, the level of employee satisfaction plays one of the key roles in the framework. The analyses from the study "Employee satisfaction trajectories and their effect on customer satisfaction and re-patronage intentions" demonstrate the importance of employee satisfaction trajectories for customer satisfaction and re-patronage intentions, as well as identify customer-employee contact as a necessary conduit for their effect. In the case of this thesis, it will be important to create not only a well-optimized framework, but also comfortable working conditions for people who will work on it. [11]

3.2.2 Employee study materials

New people will always come into the project, while staff with seniority may leave. A situation may arise where an old staff member is unable to train and provide basic knowledge of the program to a new staff member. In order to close this potential gap, it was decided to create training materials for new employees who have no previous experience with Jira and Confluence. Professional career training for novice employees at elementary levels to help them master necessary working skills is critical for both achieving employees' professional success and enhancing the enterprise growth. [18]

To help the new employees adapt more quickly to the project and framework methods, the author of this thesis decided to create training materials on how to use Jira and Confluence. The training materials will contain the most basic functions of the applications, with pictures and descriptions accurate enough to ensure that employees have minimal questions. If questions do appear, the training materials will include an Atlassian Team contact where the employee will be able to contact the Atlassian Team and receive a quick response.

According to the thesis author, the best training is learning by doing. A special TEST environment in Jira and Confluence will be available for employees, where they can

familiarize themselves with the basics of the application, try to solve test cases and better understand the features and capabilities offered by the applications.

Due to the author's experience of working in Jira-based IT support service, the author of the thesis has independently created training materials, which were subsequently translated into English, Estonian, Russian and Lithuanian. In this way, the created training materials will be further used for all new employees who will be using Jira and Confluence and who were previously unfamiliar with them. The created study materials will be available in the “Appendix” of this thesis.

4 State of art in the field business processes

This chapter will be done in order to provide an overview on the current state of art in the field of business processes. This will be used to understand what has already been done and how, as well as to take the best practices from there, and to understand which areas are blind spots and what has not yet been thoroughly explored. This way, the author of the thesis is going to get as much information as possible so that it can be used to create a framework.

4.1 Scientific literature review

The author of this thesis decided that the most appropriate method for literature review would be the semi-systematic literature review method. The semi-systematic or narrative review approach is designed for topics that have been conceptualized differently and studied by various groups of researchers within diverse disciplines and that hinder a full systematic review process. Besides the aim of overviewing a topic, a semi-systematic review often looks at how research within a selected field has progressed over time or how a topic has developed across research traditions. In general, the review seeks to identify and understand all potentially relevant research traditions that have implications for the studied topic and to synthesize these using meta-narratives instead of by measuring effect size. This provides an understanding of complex areas. [19]

In order to conduct a semi-systematic literature review, the author of the thesis chose to proceed on the based system of selection of results to find the best sources:

1) Develop a research question. [20]

2) Identify key words. [20]

3) Identify databases. [20]

4) Construct search query. [20]

5) Document search results. [20]

6) Identify the relevant papers. [20]

In addition to following the points deduced above, the author of the thesis also took into consideration the most important biases that the author decided to consider while reviewing the scientific literature. [20]

- Publication bias: – Studies with “positive” results more likely to get published. – Helpful to question what types of information might not be represented in the literature. [20]

- Database bias: – Relying on a single database can systematically limit findings for certain topic areas. [20]

- Source selection bias: – Not just relying on databases, but also grey literature, theses, etc. [20]

- Paper selection bias: – Stick to inclusion/exclusion criteria; have more than one reviewer, if possible. [20]

Considering all the above factors, the author of the thesis believes that in this way it is possible to make a rather large coverage of all kinds of literature, articles and theses that are related to the topic of the current thesis. Moreover, in order to obtain the best quality results, the author of the thesis bypassed the above bias as follows: [20]

- Publication bias - a sorting by "most popular" papers was performed, in consequence of which the author started the study from the last page to see the most "unpopular papers" that may contain useful knowledge. [20]

- Database bias - in order to avoid this bias, it was decided to use popular databases that helped to expand the findings on the topic of the thesis. [20]

- Source selection bias - To broaden the search, the selection included websites that show literature and article that are related to the topic and can prove to be a valuable source of knowledge. [20]

- Paper selection bias - Unfortunately, it was not possible to have more than one reviver within the thesis other than the thesis author, but by a combination of

keywords that included and excluded values paper selection bias was avoided. [20]

Table 1. Literature review method.

Develop a research question.	Are there ready-made solutions to the questions that have been posed in the thesis? What research has been done on business processes in the last 5 years?
Identify key words.	Business process framework, Business process improvement, Business process reengineering, Business process Management, Business process modeling
Identify databases.	Google Scholar, Institute of Electrical and Electronics Engineers (IEEE), ACM Digital Library, Springer Link, ResearchGate.
Construct search query.	("Business process framework" OR "Business process improvement" OR "Business process reengineering" OR "Business process management" OR "Business process modeling") for the last 5 years.
Document search results.	102 articles have been selected
Identify the relevant papers.	Will be done with “Three-pass approach”

After a basic sampling of all papers that fit all criteria and passed the selection process, the thesis author decided to use the three-pass approach to identify the most appropriate papers for this thesis.

«Three-pass approach key idea is that researcher should read the paper in up to three passes, instead of starting at the beginning and plowing way to the end. Each pass accomplishes specific goals and builds upon the previous pass: The first pass gives a general idea about the paper. The second pass lets grasp the paper’s content, but not its details. The third pass helps to understand the paper in depth». [21]

The first pass is a quick scan to get a bird’s-eye view of the paper. It is thus a "visual" criterion by which the author of the thesis will be able to decide whether or not the paper is suitable to flesh out the thesis. [21]

The author of this thesis found 102 suitable literatures in the form of articles, publications and book excerpts to consider the first stage. In this way it will be possible to immediately discard the results that do not fit the scope of this thesis and provide no valuable information for him. After conducting this step and quickly reviewing 102 sources, 68 different sources were eliminated. This left 34 sources, which is a normal result after conducting the first stage of screening. The author of the thesis believes that sifting is due to the fact that some publications contained similar information and were largely repetitive.

In the second pass, author of the thesis will read the paper with greater care, but ignore details such as proofs. It helps to jot down the key points, or to make comments in the margins, as author did. The main point of this part is to identify the most important points that are described in the paper and try to understand whether the research done there will fit the current thesis. [21]

The remaining 34 sources that have reached the second stage will now be examined in more detail to see if they fit the scope of this thesis or not. For this purpose, the thesis author followed the instructions from second pass and scrutinized the remaining results. In this part it was important to understand the general gist of the source in order to draw the right conclusion. After examining all 34 sources with greater care, the author concluded that only 20 of them fit the thesis' scope. According to the author of the thesis, this result is acceptable because not every work could fulfill all the criteria at once and be taken into consideration.

The final third phase is an attempt to understand the research done in the paper and to "visualize" it. The key to the third pass is to attempt to virtually re-implement the paper: that is, making the same assumptions as the authors, re-create the work. [21]

The last 20 sources that made it to the toughest and final phase of verification - The final third phase. At this stage, the author of the thesis will study very carefully and try to visualize the research source as the author of this source has intended. In this way, it will

be possible to understand the essence of the work, visualize it, and also understand the hidden, at first glance, details.

Out of the last 20 sources, only 8 works were selected, which are of great value for this thesis and will be able to complement it perfectly. These 8 papers will be used in the thesis and with their help the author of the thesis will be able to model, analyze and improve the process.

4.2 Theoretical analysis

This chapter of the thesis will be dedicated to the theoretical analysis of other techniques and frameworks that could be involved in theses. The main purpose of this chapter, which is pursued by the author of the thesis, is to give an overview of the different methodologies that could be used in the thesis, and also to describe why they were taken into account or not. However, first it is essential to define what a framework is. The definition and purpose of a framework is likely to vary across disciplines and thematic fields [22]. There is no universal definition of a framework, but it is useful to provide a brief overview of different definitions for orientation. The Cambridge Dictionary states that frameworks are "a supporting structure around which something can be built; a system of rules, ideas, or beliefs that is used to plan or decide something." So now that the framework has been determined, author of the thesis has chosen the following recognized and time-tested methodologies such as Lean Six Sigma, DMAIC and other methodologies for analysis:

- Lean Six Sigma – is an organized strategy from a business perspective that enables industries to effectively recognize the customer desires, eliminates the variability within the production, and reduces all non-value-added activities. [23]

  Lean is mainly focused on the reduction of waste and identifying activities that do not add value to a particular product, while Six Sigma identifies and eliminates mistakes, defects or failures that may affect processes Lean, also referred to as "Lean Manufacturing" or "Lean Production" is widely being used by manufacturing organizations to improve their manufacturing process and production through the reduction of waste. [24]

As a result of researching Lean Six Sigma, the author of this thesis put this methodology behind the scope of this thesis because Lean Six Sigma is more suited to manufacturing projects that are product related.

- DMAIC - refers to a data-driven life-cycle approach to Six Sigma projects for improving process; it is an essential part of a company's Six Sigma program. DMAIC acronym states for Define, Measure, Analyse, Improve, and Control. However, its application is limited to improving existing processes. It doesn't address the design of new products, services, or processes. [25]

  The fact that DMAIC cannot be used for new services and products is quite a big disadvantage, as some processes need to be built from 0 and then already developed. Nevertheless, the author of this thesis decided to include DMAIC in the scope of this thesis because it is a good base for the framework, which will help it to become better.

- PDCA - is a quality management system that is used as a continuous improvement (CI) tool that is widely used in the service and manufacturing sectors. PDCA activities consist of four steps namely Plan, Do, Check, and Action with repeated stages forming like a circle. [26]

  PDCA has the same issue as Lean Six Sigma. Initially, it was conceived for use in service and manufacturing sectors and is linked to their processes. Of course, in theory, it could be applied within the framework of this thesis, but it would have to be changed and reinterpreted a lot. Thus, the thesis author has decided that this methodology will not be included in this thesis because it does not fit the project in the work.

- Total Quality Management (TQM) - describes a management approach to long-term success through customer satisfaction. In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work. The 8 main principals of the TQM are: Customer-focused, Total employee involvement, Process-centered, Integrated system, Strategic and systematic approach, Continual improvement, Fact-based decision making, Communications. [27]

J. S. Oakland defines TQM as “an approach to improving the competitiveness, effectiveness and flexibility of a whole organization” [28]. TQM will be hard to apply to a specific project because it requires major changes in almost all areas of the organization, and this thesis is limited to one project. Unfortunately, it is not possible to realize this within this thesis from its comprehensive approach, but the author will further explore some specific points that TQM offers, namely customer-focused, total employee involvement, continual improvement.

- Scrum – recognized today as the most popular agile development methodology, has been used in a wide range of settings and for varying purposes, in- and outside of the traditional software development context. Development under Scrum is split into so-called sprints, which are typically between two and four weeks long. Sprint planning occurs at the beginning of each sprint and is used to define what can be delivered in the next sprint and what needs to be done to achieve that. At the end of each sprint, a sprint retrospective is held to support continuous learning and improvement in the team. In addition, a sprint review is conducted to demonstrate the outcome of the sprint to the customer and gather feedback and relevant information for the next working increment. [29]

  Scrum is a development methodology that is more geared towards traditional software development context, which is a bit unsuitable for the project mentioned in the thesis, as the project has a different purpose - customer service rather than software development. It is certainly important that Scrum proposes to use support continuous learning based on the work done and customer feedback. This is the part of Scrum that can be used to further develop the framework within the thesis.

- Kaizen – Kaizen means continuous incremental improvement of an activity to create more value add with less waste giving quantifiable and sustainable benefit in personal, social and professional life. [30]

  Kaizen's core principle is to improve business operations continuously, always driving for innovation and evolution. This principle is fundamental to any process, and it is important to constantly drive for innovation and evolution in order to keep up with the new solutions that become available as technology evolves in the world.

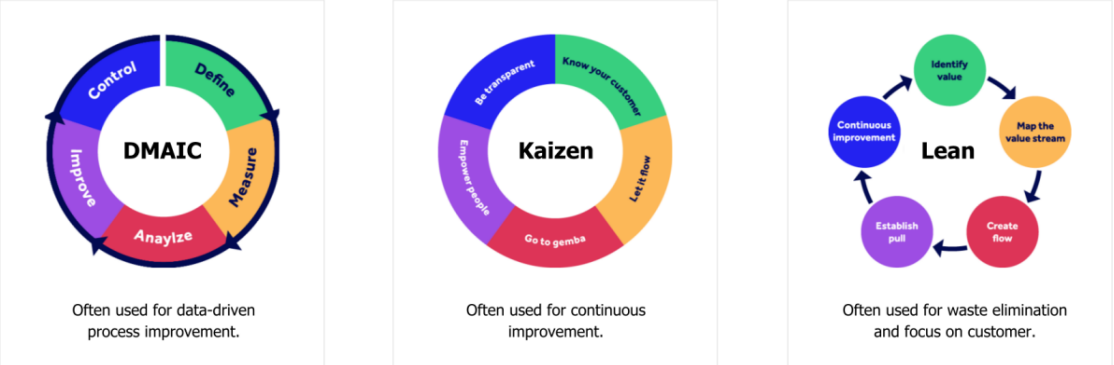

Figure 1. Brief overview of the DMAIC, Kaizen & Lean [31].

After a brief analysis of the above-mentioned techniques and frameworks for analyzing and optimizing processes in different environments, the author of this thesis decided that the information from DMAIC and Kaizen will be used to create his framework. The author of this thesis believes that DMAIC and Kaizen are able to bring to the framework the qualities it needs, which will help it to become better. Namely, DMAIC will serve as a foundation for the creation of a framework that will help to create a clear picture of what needs to be done to analyze and optimize the business process. Kaizen in turn will add its impact closer to the final part of the framework, when the project where the framework was used will achieve the stage of constant improving and monitoring.

The remaining frameworks, which the thesis author has also considered, have a slightly different scope and depend on more specific circumstances.

The author of this thesis acknowledges that all the techniques and frameworks mentioned above do indeed work and that they are well recognized frameworks, but their use depends entirely on the needs of a particular process. For the purposes of this thesis, they will be out of scope.

4.3 Overview of already existing problem solutions

For a more complete analysis and in order to get to know the existing solution better, the author of this thesis decided to study them in more detail in order to gain new knowledge. After searching in databases, the author of the thesis has found 3 articles that fit the thesis scope: "Development of a Business Process Modelling Framework for Continuous Improvements in Organizations" [16] and "Business process modelling: Review and

framework" [32]. The author of the thesis believes that the information obtained from there can significantly improve the quality of the framework and give an opportunity to look at some of its aspects from another side.

4.3.1 Development of a Business Process Modelling Framework for Continuous Improvements in Organizations: overview

The aim of this study is to develop a business modelling framework organization can use as a blueprint to conduct business process modelling. The findings of this study could assist process expects to effectively model business processes in an organization seeking to improve their business processes. [16]

The main research object of the work was the framework, for the creation of which a survey was used to collect qualitative data from various business process engineers, process analysts, and process practitioners. Based on the data obtained by surveying experts, the creators of the framework obtained in-depth knowledge of how process experts conduct business process modeling and the tools used. Having obtained the results, next step is processed them using conceptual content analysis. The main goal of using conceptual content analysis was to examine the occurrence of selected terms in the data according to the codes identified, to be able to categorize the terms or themes. It is important to note that content analysis is a research tool used to determine the presence of certain words, themes, or concepts within some given qualitative data. [16], [33]

However, it should be taken into account that due to lack of empirical data, the study used a non-probability sampling method. Therefore, no every element of the population has the opportunity for selection. [16]

In the end, the author of this paper achieved his goal and created the framework, which can be seen on the figure 2. This business process-modelling framework that organizations undertaking BPM or process improvement projects may use to define, model and analyze their business processes. Importantly, this framework offers significant improvements for analyzing and modeling processes. [16]

Figure 2. Conceptual framework [16].

Unfortunately, the framework created in this thesis does not solve the problems posed in this thesis because it is aimed at a completely different goal.

The main purpose of this study was to create a framework solely for process modeling in order to keep continuous improvement in organizations, i.e. the main purpose was solely for process modeling and it did not include any other steps such as process execution stage or its further control and monitoring. One of the key problems that is pointed out in this thesis is that the process is already outdated and it needs modernization and unfortunately the framework provided is not fit for purpose as it has a different direction of action. From a process design point of view this thesis is certainly valuable and will be taken into consideration by the author of this thesis.

4.3.2 Business process modelling: Review and framework: overview

The aim of this paper is two-fold. On the one hand, it is to review a number of business process modelling techniques and tools. On the other hand, it is to propose a framework to classify the techniques according to their purpose as a guide to practitioners and academics who may need to choose from these techniques. [32]

It is very important to consider the purpose of the analysis, the knowledge, and the different methods and tools for process modeling. The primary concern of this paper is to make that job easier, i.e., review business process modeling literature and describe the main process modeling techniques. Also, a framework for classifying business process-modelling techniques according to their purpose is proposed and discussed. The main aim is to make this whole work easier and clearer. [32]

In more detail, with the aid of a number of databases, such as Cambridge Scientific Abstracts Internet Database Service, IEEE Xplore and Compendex by Engineering Information Inc., more than 7000 scientific journals and conference proceedings since 1985 were reviewed. The key words used during the search were business process

modeling and/or review or framework. Thus, a great job has been done by reviewing the relevant scientific literature, scientific journals and found material from the web.

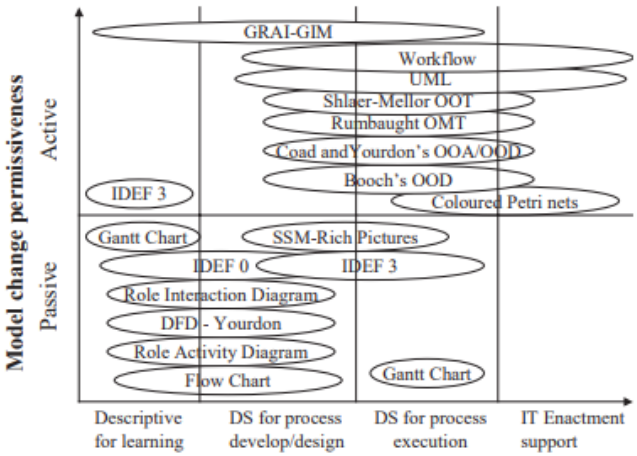

Figure 3. Classification framework to select among business [32].

In addition to figure 3, the result of this article is a huge table with many different business process modeling techniques along with their descriptions, advantages and disadvantages. This table gives a very convenient and concrete definition of the selected techniques and thus, this framework facilitates business process modeling and analysis, and the work also gives a recommendation on which tool to choose.

This study presents a framework for classifying techniques for process modeling, which is also a bit of a departure from the topic of the current thesis and cannot solve the problems posed, such as updating the process and using automation in it. In this study different models that allow to make changes in different ways have been analyzed in an excellent way, but it is descriptive and rather gives recommendations about which of the methods should be used in the most coinciding with the company's situation. Thus, this work goes beyond the scope of the current thesis and will only be taken into account by the author of the thesis.

4.4 Problems of the pre-made frameworks

In the course of work there was an opportunity to use already ready and well-known frameworks such as BPM, BPI and BPR, but it was quickly rejected because there were several reasons why it was inexpedient. For a clearer conclusion, it is necessary to consider the disadvantages of using BPM, BPI and BPR frameworks. Starting from

minuses of the BPM are that it tends to limit innovations due to its highly rigid framework and its structure does not allow flexibility for employees to work on solutions in whatever way they deem fit and moreover, if not implemented properly, it wastes time and funds [34]. Based on the above it can be concluded that BPM drives just enough into a tight framework that does not allow employees to work in some situations as they would be more comfortable and the framework must be followed to the end to make it work, and in this case there is a risk that if it is somehow incorrectly implemented it will be a waste of time and resources of the organization, which would not be desirable to allow, so BPM will not be considered as the main framework in the work.

The main minuses of the BPI are next: long time from initiation to results and external support required [35]. The use of BPI will result in a long waiting time for the process as they are playing for the long term and also external support will be needed as the implementation of BPI is quite complex and a hard process in itself. Since the company does not want to hire someone from outside due to confidentiality, it was decided not to use this framework.

The significant cons of the BPR in that it depends on various factors and hence may not be applicable to all the businesses and may improve one department while depriving another one [36]. The main disadvantage is that BPR may not be suitable for all processes, as the approach requires maximum automation of everything possible and as a result full efficiency will not be achieved as the company's resources are limited in this matter, and it may improve the department that works with the process, but at the same time worsen the situation of another department as its actions lead to the fact that the work becomes ineffective.

Moreover, the most important reason is that each company has its own unique business processes such process of the resolving customer requests, process of the internal changes in IT systems and forth, and fitting them to the framework standards would not be quite correct from the business point of view as it would have to carry a large number of changes for the sake of one process. Author of the thesis and experts of the company came to the conclusion that it is not reasonable to change all other things that already work stably for the sake of one process.

In addition, one of the biggest advantages of a proprietary framework differs in its flexibility and customizability. This means that the framework can be modified without affecting other processes and activities and still arrive at the desired result. In this way, a company will be able to customize its needs with virtually no limitations that could only exist in pre-built frameworks.

It can also be noted that the framework created in this thesis will also be used in the company in the future because there are already at least two more projects that are in a similar position, where it will also be necessary to create a process based on the care from Excel. The already ready created Framework, which is fully focused on specific process transitions from Excel, will significantly reduce the time needed for process re-engineering as well as the company's resources.

5 Framework Creation

This chapter of the thesis is entirely devoted to the creation of the framework that will be applied to the project. The framework will be based on the conclusion obtained from the literature analysis that was conducted above. Moreover, expert opinion will be taken into account when creating the framework for a clearer and more understandable structure. In the initial concept, the framework will be a diagram, which will then be converted with the help of special tools into a full-fledged process description.

5.1 Framework's foundation

For proper functioning, it is important to clarify the framework's goals and principles of operation. This will help to better understand the essence of the framework, as well as the principles of its operation.

The framework has also been hugely influenced by figure 4, which is a diagram on which the different levels of processes in organizations are written, as well as the typical evolution of processes within an organization. In the case of the framework that is created in this thesis, the requirements that a process must meet to reach a certain level or stage have been taken into account. In this way, the author of this thesis hopes to achieve a clear understanding of what a process will look like at each stage of its evolution. Based on the instructions that will be assigned to each stage of the framework, workers and managers will be able to see what they are missing for the next stage and correct the omissions, or turn to the process managers for help. For that, DMAIC will be used with its main points to collect and analyze data to make informed decisions and use teams to solve problems. It will help to make better cooperative decisions and make process better at the end. [25]

However, in the opinion of the thesis author, the most important point here is that all of this cannot be achieved if employee and their managers do not understand or share the framework methodology. Therefore, the author of this thesis decided that in order to make things work as specified in the framework, it would be necessary to communicate its main

theses to people. This will be accomplished with instructions and all sorts of help in adapting the framework.

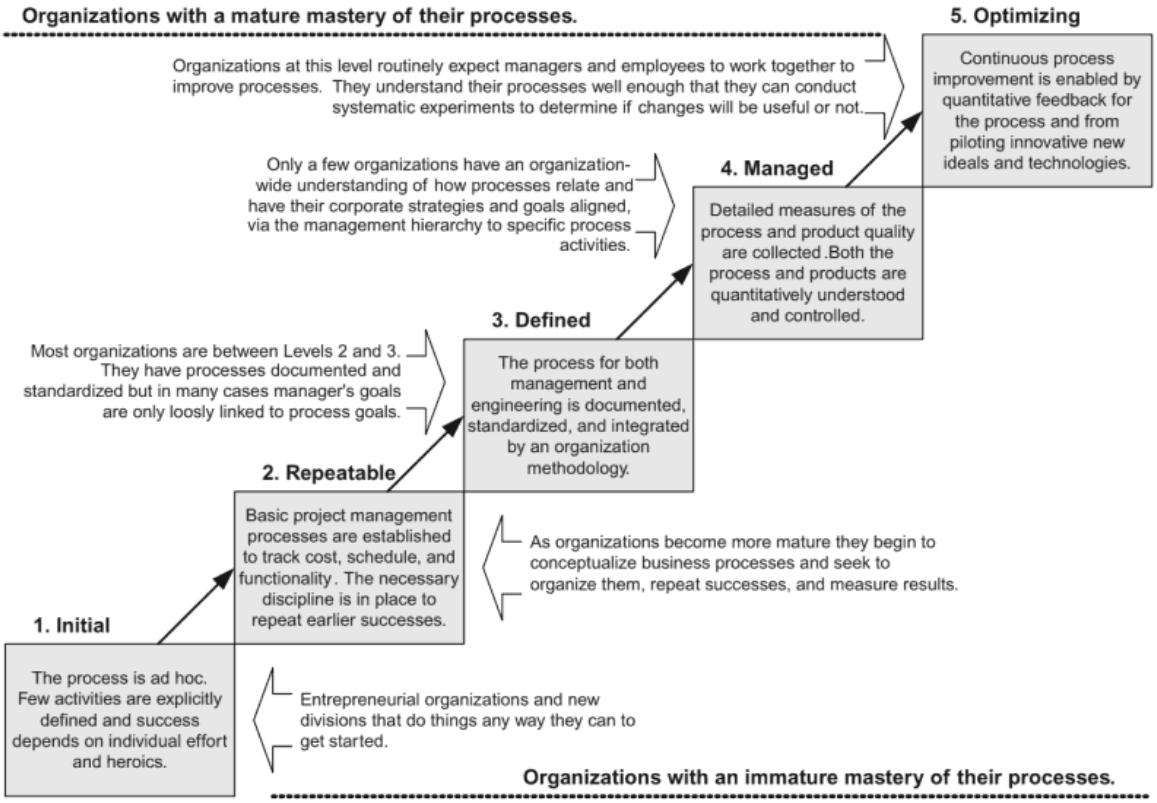

Figure 4. The five levels of the software Engineering Institute's Capability Maturity Model [37].

Moreover, levels on the figure 4 represent the basis on which it will be possible to determine the stage of development of the process for a clearer understanding of it. Within this thesis the author plans to achieve the highest possible level of process excellence in order to provide the highest possible level of service and service as well as to understand how processes are related to each other and how they can be better controlled.

5.1.1 Framework's goals and purpose

The very first question that can be asked is how to determine if a process needs to be updated? According to the experts interviewed, processes should be reviewed once a year and updated preferably once a year if there are new requirements and if there are any changes that affect the process. Also, even if the changes have not been made for some reason, the process should be valid for at least one year. This will help to ensure the stability and operability of the process.

This section is devoted to describing the ultimate goals of the framework. Goals for the framework are necessary so that it can be evaluated after it has or has not achieved the set goals. In the context that the framework may fail to achieve any of the set goals, the author of this thesis will make appropriate corrections that should facilitate the achievement of the unachieved goal in future applications. In this way it is possible to achieve continuous improvement of the framework based on the experience gained and thus making it better.

Since the framework consists of the basic three best known process improvement techniques:

- Business Process Management
- Business Process Improvement
- Business Process Reengineering

BPM, BPI, BPR are certainly different methodologies that have their own individual goals, but still they have common points, so the author of this thesis decided to combine them as much as possible and apply them to his own framework. Thus, based on the combination of BPM, BPI, BPR the author of the thesis has compiled the following goals for the framework: [38] - [40].

- Improving operational efficiency: all three of the above techniques aim to improve the efficiency of business processes by reducing all sorts of costs by streamlining workflows and eliminating unnecessary activities that do not bring value to both customers and employees. [38] - [40]
- Reducing business costs: one important objective is to reduce operating costs. This can be achieved through more efficient use of work resources, all sorts of automation of manual processes and workflow optimization. [38] - [40]
- Improving the quality of the service: framework focuses on improving the quality of the service produced. By improving processes, it will be possible to reduce the number of errors made by workers and improve the quality of results. [38] - [40]

- Increasing customer satisfaction and loyalty: process improvements will lead to improved customer service as services will become more reliable, faster and of higher quality. [38] - [40]

- Flexibility and adaptability of the framework: one should strive to make the processes more adaptable and flexible to changes, which would allow quick response to inevitable changes in the external environment. [38] - [40]

- Standardization and documentation: BPM, BPI and BPR thoroughly emphasize the importance of standardizing processes and maintaining thorough documentation, which helps to ensure consistency and promotes continuous process improvement. The thesis will use Confluence for this purpose. [38] - [40]

It is important to underline that each of these approaches BPM, BPI, BPR, despite having common goals, has its own focus and methodology for achieving those goals. BPM offers more continuous and incremental improvements, while BPI focuses more on improving existing processes, and BPR is a more extensive process redesign and rethinking. [38] - [40]

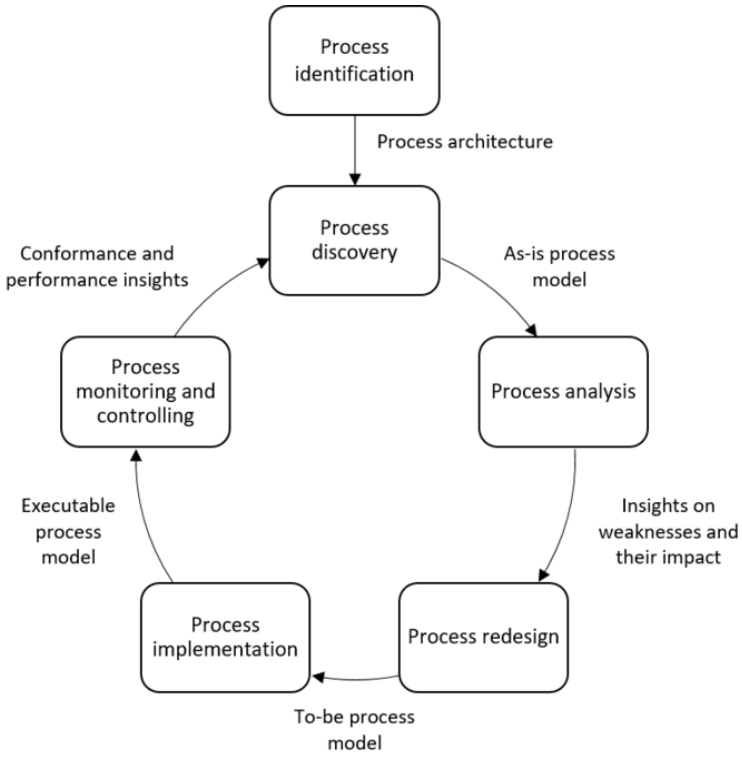

Figure 5. The Business Process Management Lifecycle [41].

Figure 5 served as the basis for the framework because it contained all the necessary parts from process definition to monitor and control. Based on this picture it can be said that all the major parts of the process are covered and everything is based on best practices.

5.2 Framework's stages description

To better understand the essence of each of the basic steps of the framework it is necessary to familiarize yourself with the device BPM, BPR, BPI, which are the main techniques on which the author of the work relied. The author of the thesis would like to note that they all have different approaches to the work, but they share the same aim: to enhance the process. [42]

The BPM lifecycle consists of 6 phases:

1) Process identification, where one or more business processes are scoped and selected for management based on their relevance to a business problem; [42]

2) Process discovery, where the current state of such processes is documented, typically in the form of as-is process models; [42]

3) Process analysis, where issues associated with the as-is processes are documented and where possible, quantified using performance measures; [42]

4) Process redesign, where different change proposals are evaluated, typically using to-be process models, to overcome the issues determined; [42]

5) Process implementation, where the most promising changes to move from the as-is to the to-be processes are implemented via a change management plan as well as, where required, via a process automation solution; [42]

6) Process monitoring and controlling, where the performance of the redesigned processes that are now running, is measured against certain performance objectives. Corrective actions may be identified if such objectives are not met, leading to the lifecycle being repeated on a continuous basis. [42]

For the sake of completeness, the main objectives of BRP should also be considered. BPR four main key concepts: [43]

- Change task: BPR is a complex, top-down driven and planned organizational change task during which one or several business processes are fundamentally changed. The change task can be decomposed into the following generic stages: identification and analysis of current business process(es); planning, implementation and controlling of new business process(es). [44]– [45]

- Performance improvements: BPR strives for radical performance improvements in business processes. Frequent improvement goals are cost or time reductions, quality or service enhancements in an "order of magnitude" range (e.g., 80%-time reduction in an order fulfillment process). [44]– [45]

- Business process: the focus point of BPR is one or several cross-functional, inter- or intra-organizational business processes defined as a "collection of activities that takes one or more kinds of input and creates an output that is of value to the customer". [44]– [45]

- Information technology: IT is the primary enabler of new business processes. BPR does not aim to automate an existing business process but to deploy IT to enable a new business process [44]– [45]

After finishing the data study and compiling the general points of BPM, BPR, BPI, it turned out to compose the basic stages of the framework. Since the basic characteristics for process change are not particularly different among BPM, BPR, BPI, the basic structure of the framework will be very similar to them. The framework consists of 6 stages that represent the steps of the process evolution in an organization as demonstrated in table 2.

Table 2. Framework's stages and their description.

Process stage	Short description
Process identification stage	Identification of the main process actions.
Process description stage	Description of the identified process activities.
Process design & analysis	Creating a design for a future improved version of the process and analyzing the shortcomings of the current process (AS-IS state).
Intermediate result	TO-BE state that is agreed upon by all participants in the process.
Process execution	Agreement and execution of actions for process improvement.
Process monitoring and control	The stage of monitoring and checking the process to see if everything is going according to plan or not.
Process improvement	Based on provided feedback, improving process deficiencies.

Based on the obtained data, the author of the thesis managed to make a diagram (figure 6), which fully depicts the basic stages of the framework. As in the case of BPM, BPR, BPI process is completely cyclic. In case the process needs to be modernized, but its essence remains the same, the step with identification can be skipped, because all documented actions in the project have already been done in the TO-BE state of the process and on their basis, it will be possible to go straight to the description of new, desired actions.

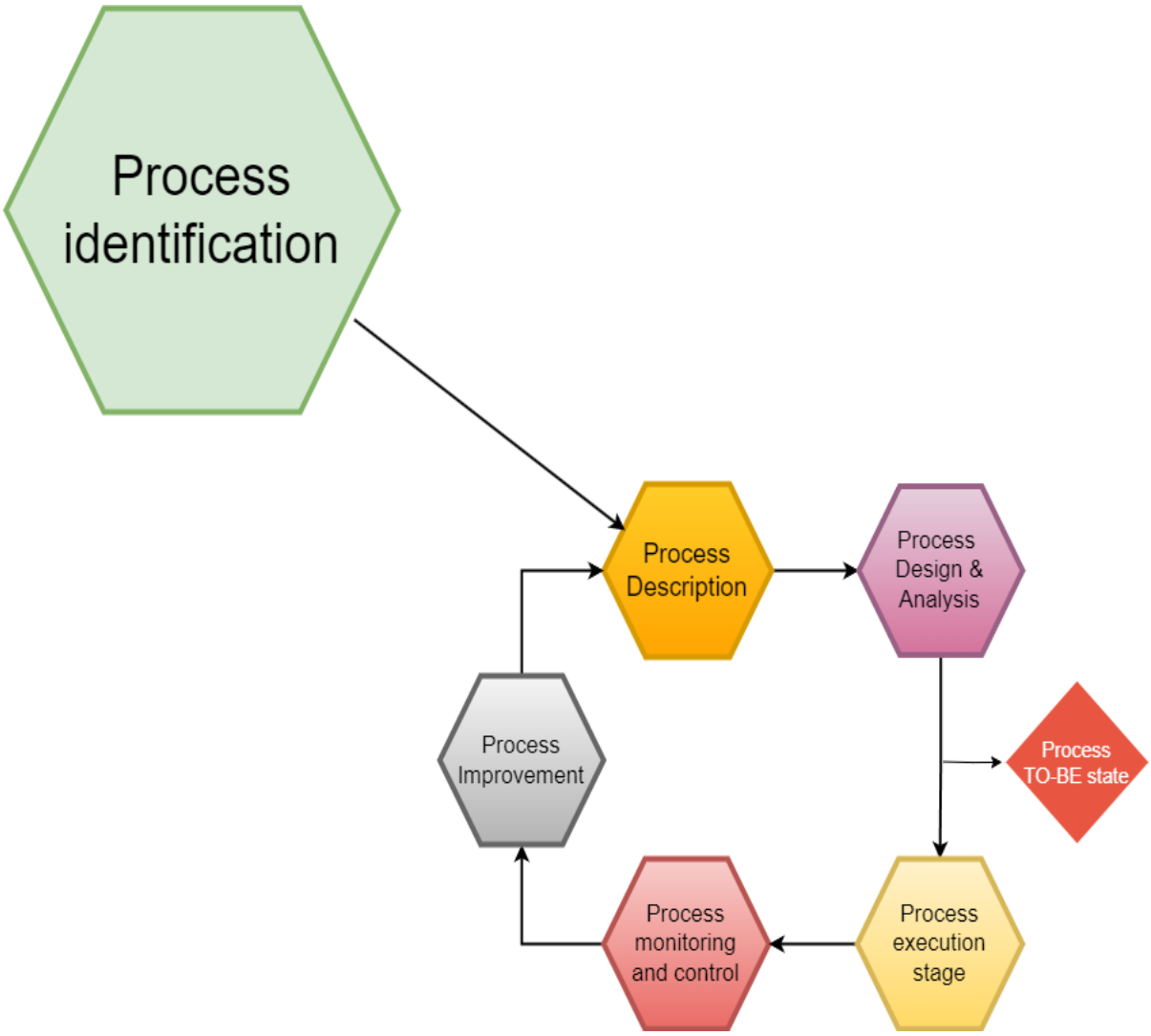

Figure 6. Framework's base stages.

In case of the framework, it is also important to note that in this framework the identification stage takes place only once and does not close the cycle. This is done because the goals of the process may change over time, but if the process has been identified once and needs to be further identified taking into account the change of priorities, it is necessary to start from the beginning, and in other cases it is recommended to skip this phase and go straight to the process description if the goals and input and output data have not changed.

5.2.1 Process identification stage

Process identification refers to those management activities that aim to systematically define the set of business processes of an organization and establish clear criteria for selecting specific processes for improvement [46]. The process identification phase in

BPM encompasses several key objectives. Firstly, it aims to identify and document the organization's current processes, including their inputs, outputs, activities, and stakeholders [47]. This step involves gathering information about the specific process, setting up a process scope, as well as formulating objectives that should help to solve the business problem. This should be done by interviewing people who are in some way related to the project, as well as reviewing all sorts of documentations (if available). [48]

The activities in the business process are categorized into three, namely Real Value Added (RVA), which is the activity required to produce output according to customer needs, Business Value Added (BVA), namely activities that do not directly provide added value to the output produced for customers and Non-Value Added (NVA), namely activities that do not provide added value for both the customer and the company [49]. The most important part of this part is to understand what the process is, its current inputs, outputs, and key points that are important to consider. It is a necessary to get to know the people who is involved for the process in order to define their actions and areas of responsibility. In this way, it will be possible to cover almost all parts of the process during the identification phase and see the details that will help in the future when optimizing the process. Even the smallest details are particularly important here and will be useful in the future. [48]

5.2.2 Process description stage

Once the most important process data and actions have been identified and documented, it is now necessary to properly describe it. The description should be detailed enough so that anyone involved in the process can understand what they are dealing with and the impact of certain things in the process. At this stage it is already necessary to describe in more detail the areas of responsibility and actions of each role that is in any way related to the project. In this way, each role will have an understanding of what it can and cannot do [50]. Experts say that in order for all stakeholders to participate in the process, it is necessary to organize workshops, collect feedback afterwards, and schedule new meetings to explain what is going on. This will help to achieve the common understanding of the situation.

Next step is precise description of the inputs and the outputs. Documentation about this should be created, then it should be possible to write down all the performance indicators and the values to strive for. Next step is to describe the process of measuring these

indicators. Consider moving from these to other performance indicators of interest to other users [51]. For this, various visual methods, such as charts or diagrams, are best suited to better understand all the nuances from all angles.

5.2.3 Process design & analysis stage

Process design, modeling and analysis: It includes modeling of AS-IS and TO-BE business processes. This helps in understanding overall structure and requirements of the modeled business processes. The process models are analyzed for strengths, opportunities and weaknesses and are validated through different techniques. This may include process simulations too. It is important to note that process design requires the use of specialized tools that depend on the context of the organization. In this way, the made process will be a more elaborate and detailed process. [50]

An in-depth process analysis should help identify the key strengths of the process as well as identify the weaknesses that only prevent the process from working more well. Different techniques can be used for analysis, such as SWOT analysis or writing out all the advantages and disadvantages, taking into account the blind, uncovered areas of the process. [50]

After all these operations, the process participants should have a picture of how the process should work or a TO-BE state. In the TO-BE framework, the TO-BE stage is marked as an intermediate stage. In this stage, it is expected that further actions are agreed upon among all process participants and they have a common perception of the process. A common consensus is necessary to achieve the best result, especially for people who will then work directly with the process. [37]

5.2.4 Process execution stage

The main point of this implements the improved process and roll-out of the redesigned process. At this stage, it is very important to think about the strategy for applying the changes, as well as the proper allocation of resources. From the very beginning, if possible, it is highly recommended to test the redesigned process in a test environment where all the people involved in the process can try and test the changes. In this way it will also be possible to detect unaccounted defects and make the necessary corrections before adopting the changes in production [52], [53]. It is important to take the change step by step, following each step carefully and making sure that everything goes

according to the established plan. It is also important to make sure that the people involved in the project are clear about their role and are able to suggest appropriate changes if necessary. [53], [54]

At this stage, unexpected difficulties may arise that have not been thought through. Therefore, it is important to quickly organize a review of the strategy and take into account these shortcomings and their impact on the process. [53], [54]

5.2.5 Process monitoring and control stage

Modern information technology offers unprecedented means for real-time monitoring and control of cross organizational business processes. Business process monitoring is concerned with the analysis of events produced during the execution of a business process to assess the fulfillment of compliance requirements and performance objectives. Process monitoring can take place offline, via periodically generated reports, or online, via dashboards displaying the performance of ongoing cases of a process in terms of performance indicators such as cycle time, resource utilization, and defect rate. [55], [56]

There are six important issues of control in the service environment which must be followed by the team to ensure improved process performance:

- Ensure the improve process is recorded. [57]
- Turn the outcomes into cash (verified by the finance division). [57]
- Maintenance of improvements must be confirmed during the working process. [57]
- An automated monitoring system must be set up to identify “out of control” performance. [57]
- Organize the working process. [57]
- Create a control plan. [57]

There are different methods of control and monitoring, it all depends on the application where the process is running. Some applications have built-in monitoring systems, while some applications require third-party software. However, the most important point is to

constantly keep the finger on the pulse and monitor the set KPI (key performance indicators) and identify weaknesses that will need improvement.

5.2.6 Process improvement stage

Business process improvements are carried out to provide added value to activities carried out so that the business process becomes more effective and efficient. [58]

Business process improvements are carried out to provide added value to activities carried out so that the business process becomes more effective and efficient. Each improvement must have a specific purpose or value behind it. In the best case, the improvement should have the property Real Value Added (RVA) or Business Value Added (BVA) and in the other case it is necessary to get rid of a process that does not add any value to the process, i.e. Non-Value Added (NVA). After selecting the best alternatives for customer needs, the project leader should pay attention to the implementation processes such as:

- The project leader should focus on project activities closely and if there is anything wrong, the project leader will immediately stop the process of the project activity. Then, the project leader will figure out why those problems occurred, and how it will be eliminated to avoid delays or interruptions in the improvement process; [58]
- Implement an action plan for eliminating the quality issue; [58]
- Plan a strategy for the removal of restraining forces and the subtle promotions of driving forces. [58]

Moreover, the objective of such a business process improvement plan should not be just descriptive, e.g., to describe with dashboards some performance metrics, but it should have prescriptive components (what should be done) as well. So, every improvement should always refer to performance indicators [59]. With a particular improvement having a metric that helps to track it, it will be adequately possible to evaluate its performance and decide whether the implemented improvement has achieved the given goal.

5.2.7 Continuous improvement as the process state

Once the process is fully implemented as planned, all activities are documented, and key metrics are established and tracked, the continuous process improvement phase begins.

In this phase, enterprises have to create a continuous improvement process to identify and realize continuously Lean-measures. To achieve this aim, the challenge is to implement a holistic and powerful concept as well as a Lean culture in the mindset of all employees and the management [60]. Continuous improvement should always be based on something. This can be either the opinion of someone who is connected to the process and sees its weaknesses that have been overlooked or only discovered in practice, or some metric that has not been achieved. Either way, the ultimate goal is always the same - to continuously improve the process. It is important to realize that process participants are often human beings and some things that work in theory may not work in practice. It is therefore worth paying special attention to these things and taking appropriate action. Moreover, for example, it might be considered 10 different behaviors that will contribute to continuous improvement of the process [61], [62]. During the course of the everyday work the employees share a set of cultural values that reinforce CI. This process involves collecting and utilizing the experience of both groups and individuals. And this learning takes place on the basis of both positive and negative experiences of the worker himself and other colleagues (collective learning). Productivity is always present in all boundaries, both external and internal and at all levels. Ideally, however, people throughout the organization are actively engaged in incremental improvement. Managers at all levels demonstrate a commitment to participating in and leading CI. Support for and strengthening of CI mechanisms and approaches such as procedures, systems, and organizational structures are regularly evaluated. The development and monitoring of mechanisms such as teamwork and training are used to encourage employee involvement in the CI process. Individual teams prioritize improvement activities based on the organization's objectives and strategic goals. Finally, employees demonstrate understanding and awareness of the company's goals and objectives. [61], [62].

Also, if the system where the process takes place allows for automation, then this opportunity should be taken advantage of. In this way it will be possible to reduce manual errors and increase the success rate. But it is important to keep in mind that this should also be discussed and tested before any automation is applied.

5.3 Framework's conclusion

The framework created within this thesis will work well for business processes that are related to customers and their various transactions. Using this framework, the process should ideally become reliable, efficient, and less costly. A more accurate assessment of the effectiveness of the framework will depend on the KPIs set and their contribution to the process.

Figure 7. Framework's final version.

According to the results of creating the framework it turns out that it has six steps in total, namely process identification, process description, process design and analysis, process execution, process monitoring and control and process improvement while TO-BE state

is the intermediate outcome and de facto represents the desired result that the process will strive to achieve. It is important to note that in the TO-BE step a common vision of the process should be achieved so that everyone understands what will be done and how it will be done.

The cells indicated by the arrows represent the main steps while the other cells above them represent the set of goals to be accomplished at this stage of the framework. All activities take place within Jira and Confluence, but for the most part Confluence is where all the documentation is captured while the activities related to monitoring, control monitoring and implementation take place mainly in Jira.

Also, this framework has the property of scalability, which allows, if necessary, to make changes to its system and devices and remake it for the different needs of a particular business process. This property makes this framework very valuable because of its versatility and the ability to be used in any process.

Moreover, the key success factor is KPIs and user feedback. And in order for the framework to also become better, it is also subject to continuous improvement, where the opinions of various experts and studies are taken into account for improvement. In this way the framework will not become obsolete and will be able to be used for a long time in various processes.

However, it is important to note that the framework itself is trying to improve the performance and efficiency, but this also depends on the input of the people themselves and the applications they are using. For example, some applications do not have the ability to automate monotonous manual tasks and in this case, this part of the framework will not be possible to use. The framework tries to pay attention to what needs to be done and how, but it is not able to replace the people who will work on the process.

It may also be noted that experts believe that in the future AI technologies such as ChatGPT, will be involved in processes and believe that this is the trend of the future.

To summarize, it can be said that the framework has some limitations, which, however, do not prevent it from being universal and suitable for most types of processes. The most important point is to evaluate the possible flexibility of the framework and not be afraid to change something for personal needs.

6 Business Process analysis

In order to best understand the essence of a business process, it is necessary to first define what a business process is. Business process can be defined as “a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer” [63] or “a specific ordering of activities across time and place, with a beginning and an end with clearly defined inputs and outputs” [64]. These definitions describe business processes in slightly different ways but have one major similarity, they both emphasize clearly defined inputs and outputs. Therefore, before upgrading the project, it will be necessary to study all kinds of inputs and outputs that will be used to improve and optimize the project. The following sections will be devoted to analysis of the tools used in the work, as well as the use of the framework on the project itself, taking into account all possible nuances.

6.1 Tools overview

In this paragraph, an overview will be made on the tools used during the execution of the work that the author of the study has chosen. Moreover, comparisons with other available tools that could also be used to fulfil the objectives of the study will be presented.

6.1.1 The main tools: Jira and Confluence

Jira – an issue tracking system developed by Atlassian Corporation starting in 2002. It is most commonly used for software bug tracking, but thanks to its advanced customization features, is highly suitable for other types of ticketing systems (work orders, help desks, etc.), and project management. [65]

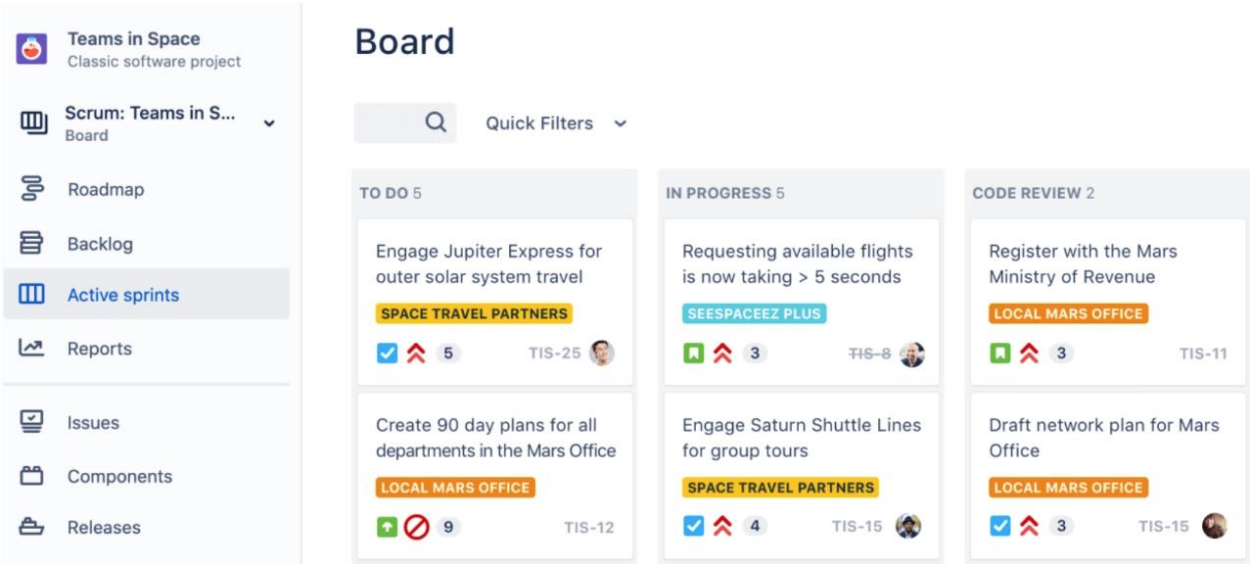

Figure 8. Example of Jira interface [66].

Jira Service Management - Atlassian's service management solution for all teams. Jira Service Management is designed to help to unlock high-velocity teams by:

- empowering every team to deliver great service fast
- bringing visibility to work
- accelerating the flow of work between development, IT, and business teams.

Built on Jira, it encompasses deeper service management practices across service request, incident, problem, change, knowledge, asset, and configuration management. [67]

The author of the work believes that Jira is simple and intuitive enough to be used by users of any age. In the case of this thesis, it is very important that the users are able to adapt quickly to the new environment and are able to do their work faster and better, making as few mistakes as possible.

Confluence – is team workspace where knowledge and collaboration meet. Dynamic pages give teams a place to create, capture, and collaborate on any project or idea. Spaces help teams structure, organize, and share work, so every team member has visibility into institutional knowledge and access to the information they need to do their best work. [68]

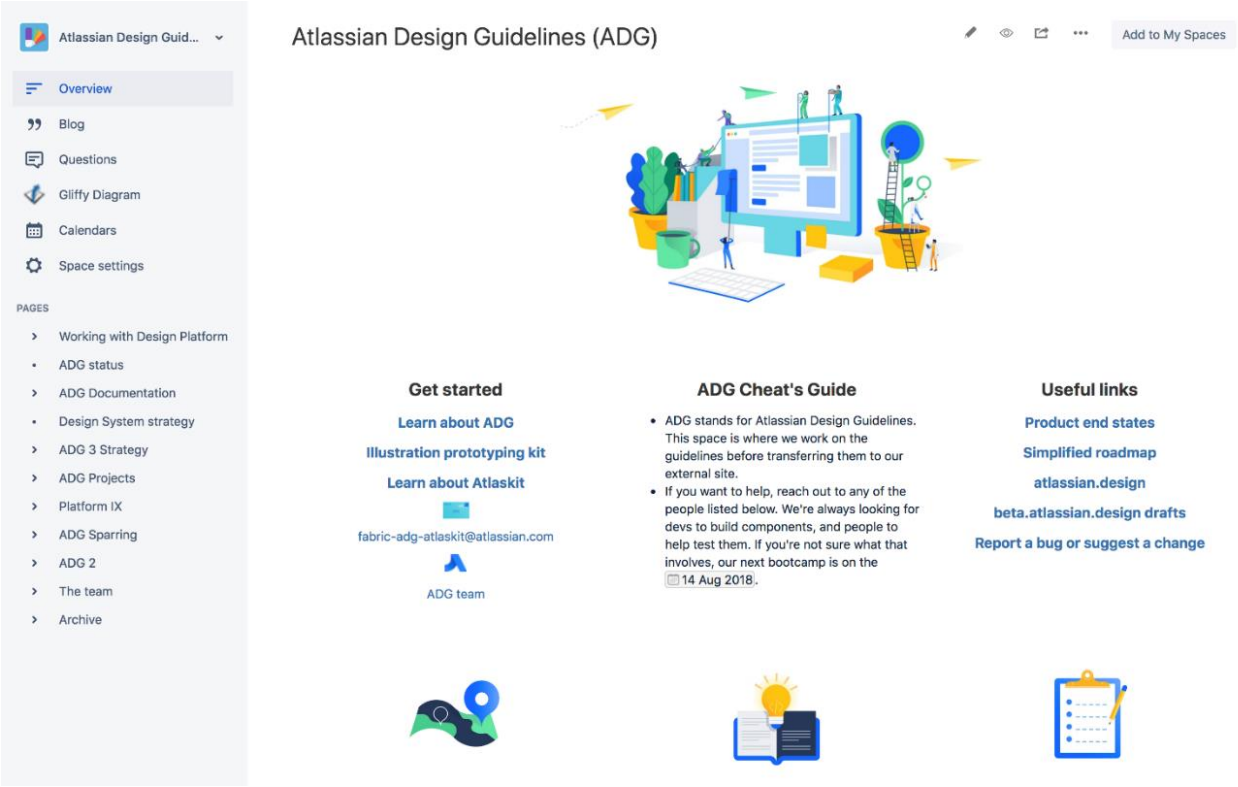

Figure 9. Example of Confluence interface [69].

The author of the work will use Confluence to document the business process analysis and also to record the findings of this research thesis. This is done so that newcomers can read about how the business process works and get up to speed with the new team. For experienced employees, it will be useful to familiarize themselves with the changed working conditions and to get a more detailed understanding of the changed business process.

Moreover, Confluence will also include separate chapters with training materials created by the author of the thesis, which will help people to get up to speed with the new team, as well as work with new applications and explain all their basic features. This is necessary for newcomers to get better acquainted with the process more quickly to start working and become a full part of the team.

6.1.2 Jira and Confluence usage capabilities

Now it's important to note what kind of impact Jira and Confluence make at all in order to guide projects through processes and how they are built around them.

Jira project management centers around the planning, execution, and control of temporary endeavors aimed at achieving specific goals, within defined timelines and budgetary constraints. [70]

Jira has great possibilities for automation and it does it in two different ways. The first and accessible way is the built-in Jira automation which allows to create different variants of rules for use that can react to certain actions and take appropriate reactions to them, it all depends on the user's configuration. The second way is the scripts that can be written, but for this it is a necessary to have a paid plugin that will run them, so the thesis was decided that the author becomes exclusively on the free and accessible to all option. Jira automation can be used to automate a wide range of tasks and processes, such as:

- Triggers: Automating actions based on specific events, such as the creation or resolution of an issue. [71]
- Rules: Automating actions based on conditions, such as the assignment or status of an issue. [71]
- Scheduled tasks: Automating actions to be performed at a specific time or on a recurring basis. [71]
- Custom scripts: Using custom scripts or code to automate tasks or processes. [71]
- Jira automation can help teams save time, reduce errors, and improve efficiency by automating repetitive or time-consuming tasks. [71]

In the case of this thesis Jira automation will certainly will be used and this topic will be covered in the following chapters which are directly related to process automation.

Confluence is a great way to organize the work of teams, where workers can update regular information, quickly find the necessary resources by keywords or using search and also give confidence to the team that everything is done on time.

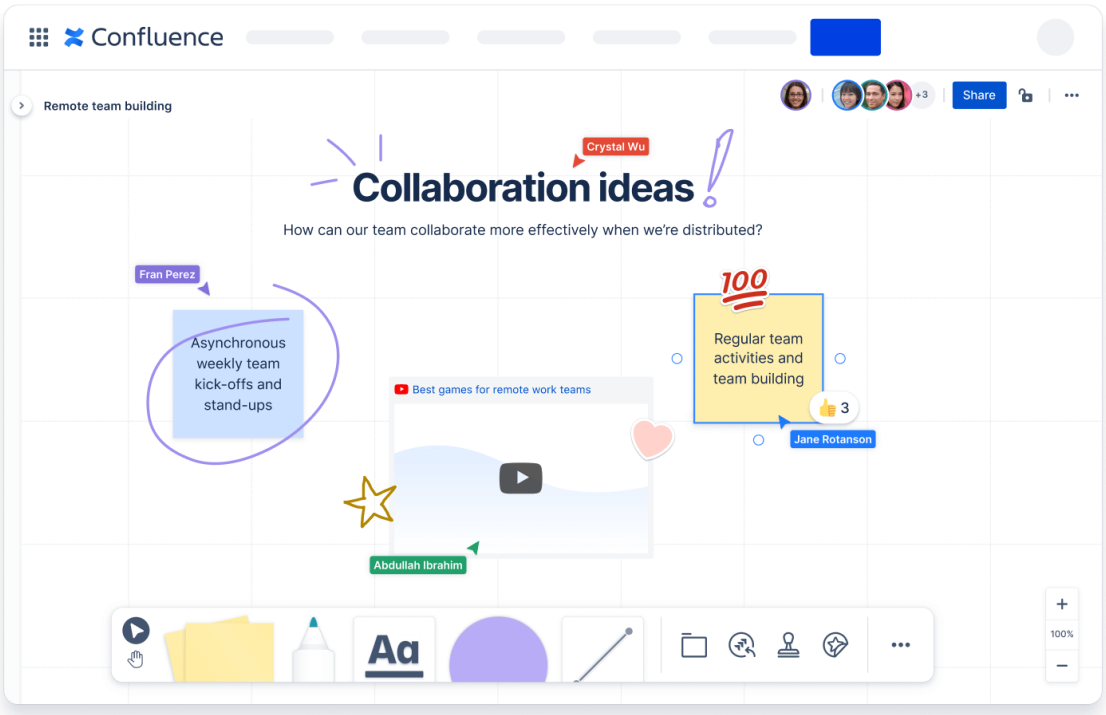

Figure 10. Example of the Confluence Collaboration board [69].

The key features are that the inclusion allows real-time editing of the file together, leaving comments and other elements that will help to better realize what is happening on the page. Also, thanks to the built-in integration with Jira, any notes can be automatically transferred to Jira tasks in just a couple of clicks, which greatly speeds up the working process.

Moreover, through the use of Confluence, the author of this thesis solves the following emerging problems that the team had previously encountered, namely: team is operating with old information, team can't find the resources they need and team is inconsistent. [72]

6.2 Project Description

In order to get a clearer picture of the process itself, it is necessary to find out what the project, which is directly related to the process mentioned in this thesis, is doing.

The project is called LTT and it deals with solving various requests from clients and partners. At the moment of writing this thesis there are 10 people in the team: 9 specialists in solving requests and 1 manager. There is also a separate call center division that registers calls for the LTT team. All communication with clients at the moment takes

place via emails or by phone. Further, all the data received from the client will be entered into a special excel file to which all members of the LTT team have access. The excel file is a "mini database", which contains hundreds and thousands of different requests, which have their own special fields to be filled in (for example, name of request, assignee etc.).

At the moment there are 15 types of different requests that clients can use in the project. Each of the requests has its own unique fields that need to be filled in, but each request contains three fields that are common to all of them: object number, code number and unique identification number. Requests are mainly related to contracts and their modifications as well as issuance or modification of various certificates.

Once a request is registered, any specialist from the LTT team can take it to work. If any questions arise during the work, the specialist will contact the client via email. After solving the request, the specialist sends the final solution to the client via email. After that, the request is closed in excel file.

6.3 Process Identification

The main objective of this chapter is to identify and document current processes, including their inputs, outputs, activities and stakeholders. All data obtained while using the framework on this process will be recorded in Confluence and available to employees for verification.

The main process inputs: there is a different data set for each reference. The basic data that all requests have are:

- Personal identification code
- Object number
- Contract number

If the request is registered via telephone, the call center specialist asks the necessary information from the client at once. If the request is registered via email, it will be necessary to clarify the missing information from the client separately. These activities can be considered RVA because they are necessary to produce the result desired by the customer and therefore, they must remain in process.

Process main outputs are depending on the type of request. In most cases, these are documents that are needed by clients (e.g., a new modified contract or a death certificate).

The main LTT specialist's activities include different options. Specialist is responsible for resolving the request, communication with client after request have been registered. Basically, the solution of any request takes place in 3 main stages:

- the request is created
- the request is taken into work
- the request is solved.

Most of the request's types are related to documents that LTT specialists have to create, verify and send to the customers.

In case of this process, stakeholders are clients and partners who wish to utilize the services of the LTT project. Mostly, the main reason for them to contact LTT team is to modify, create new or delete the contract. After all, clients and partners are the direct beneficiaries of the LTT project's activities.

At the end of the process identification stage, it is possible to assume that there are 4 categories of people directly related to the process: customers who make requests, the call center that receives and registers requests in the system, as well as the LTT team specialists who deal with the resolution of requests and the LTT team manager who makes sure that all norms are fulfilled and requests are resolved.

6.4 Process Description

This chapter will detail the inputs and outputs, as well as the key roles and their areas of responsibility, and furthermore, the current objectives and principles of the process.

Each request contains three mandatory parameters: unique identification code, object number and request number. These parameters are standard data for any type of request. If a client wishes to contact the LLT team, he/she should provide these data so that his/her request can be registered in the system and can be handled by the LLT team.

As far as output data is concerned, it is often a document that has been drawn up by an LLT employee and which has been handed over to the client for further use. The LLT team has a list of exceptions, according to which they can reject certain types of requests that may be, for example, incorrectly formatted.

6.4.1 Definition of the process goals and principals

One of the main principles of the process is that it is completely client-centered and client satisfaction is of paramount importance. Unfortunately, at this stage it is very difficult to say about the level of customer satisfaction with the service as the process does not include the collection of feedback on the work of the specialists. If any feedback was left, it was purely at the request of the client.

Moreover, one of the key principles is that the team promotes active co-operation between each other and encourages teamwork. Therefore, the specialists start working more efficiently and try to help each other in case of any difficulties.

To summarize, the main key objectives could be highlighted as follows:

- Solve more than 95% of requests within service level agreements (SLA) limits.
- Keep the number of errors around 5% (out of 100 requests).
- Collect customer feedback and make improvements based on it.
- Achieve a high level of customer satisfaction (4 stars out of 5 per 100 requests).
- Achieve a high level of team collaboration.

6.4.2 Definition of the roles and responsibilities

At the moment there are only three main roles in the project: manager, customer service specialist and call center workers who register requests.

The main purpose of the manager's work is to control the efficiency of the specialists, to reduce the expected time of receiving a response to the client, as well as to introduce all sorts of innovations and improvements that would help to speed up and improve the efficiency of the specialists.

The main idea of the specialist's work is to solve appeals that came into the system and were registered with the help of the call center specialist can deal with one appeal at a time in exceptional cases unless he is waiting for a response from the client, as the waiting time for a response can vary from a couple of hours to several days. When working with a request, the specialist is obliged to enter all new data received into Excel, if any, as well as to contact the client via e-mail and notify him that his request has been executed with a certain status (resolved/not resolved and why) and send an e-mail with all the necessary information that the client needs.

The main meaning of the work of call center workers is that they have to register all incoming calls via e-mail, for this purpose they have a common mail box, which they all look through, as well as answer the calls of customers and on the basis of the calls to register the appeal. It is very important to note that because they have a common e-mail box in which all letters from customers are stored. It is important to keep track of duplicate requests, i.e., the employees should have some place where they can see if a ticket has already been created with the same parameters as in the letter.

6.5 Process Design & Analysis

This chapter includes the formulation of the 'AS-IS' state, which is then analyzed using SWOT analysis, and the identification of key process weaknesses and their impact will be brought forward.

6.5.1 Process “AS-IS” state

At the moment it turns out that the "AS-IS" of the process is as follows: the project has call center employees who register requests via e-mail or telephone. It happens that one request was registered twice, such errors happen in turn due to inattention of specialists, as well as due to inconvenient way of checking for duplicates in Excel.

Other problems encountered mainly by LTT project specialists is that some requests can be solved by two or three people at the same time, because they simply forgot to tick the field in Excel where it is indicated that they are dealing with a particular request, or another common mistake is that they did not fill in all the necessary fields in the Excel file until the end, thus creating confusion, as all the fields of the request should be filled in to ensure the best possible service.

Moreover, it can be said that at the moment the process looks completely unoptimized and has instinctive goals, i.e. people want to work well and efficiently and also provide the best possible customer service, but only the most basic things are tracked, such as the number of solved requests. Using an Excel file, where it is not even possible to archive old, already solved a couple of years ago, requests cause great discomfort for employees and is an extremely inefficient way of keeping records of requests at the moment.

6.5.2 Process SWOT analysis

In order to identify all potential opportunities for the correct development of the process, it was decided to use a SWOT analysis, which could quickly and accurately provide information about the strengths, weaknesses, opportunities and threats of the process. The SWOT analysis will therefore help to make more competent use of strengths and turn weaknesses into strengths, as well as reveal potential opportunities and prepare for potential threats and prevent them as much as possible.

SWOT analysis involves analyzing all the strengths and weaknesses of the process, as well as potential opportunities for improvement and the main threats to which the process is exposed.

Table 3. SWOT analysis of the process.

Strengths	Weaknesses
Great Teamwork Ability to solve any requests Extended experience of the team	Lack of automation Lack of KPI Lack of the system for recording requests Lack of standardization Lack of proper documentation
Opportunities	Threats
Opportunities to use modern IT solutions Creation of detailed documentation	Long adaptation to the new system

Usage of the new request registration system Creation of automation Clear identification of process goals and objectives	New employees will have a harder time without documentation Employees will have to change long-established habits

With the help of the data that were obtained from the conducted SWOT analysis will be used to improve the process to cover all potential weaknesses and reveal strengths. Some of the following process improvements that might otherwise go unnoticed will be based on this information.

Thus, SWOT analysis helped to identify not only the main weaknesses of the process, but also the opportunities to be realized to improve the quality of the process. Knowing all the advantages and disadvantages, it will be easier to choose the right development vector for the process.

6.5.3 Definition of the process weak points ja their impact

Identifying the key weak points of the process and their impact will help to more clearly establish the vector of movement that needs to be followed to eliminate them. Likewise, it will be possible to identify unnecessary activities that were caused by these points and get rid of them, thus making the process more efficient and more likely to deliver value.

Lack of standardization can lead to unstable server and also service quality and moreover it makes the process indicators more difficult to measure and also it is very hard to compare them with indicators among other similar processes. Besides, the lack of standardization makes it difficult for workers to move between business units because each time they would have to learn new processes and procedures. [73]

Lack of automation might lead to the next consequences: increased human error rate since all the action have been done manually and inefficiencies as well as inefficient employee time usage, which can result in a negative experience for the customer or the user of the process. [74]

KPI is very difficult to achieve when it is not set. Lack of KPI reduces the motivation of workers and in the end, it will be very difficult to determine why some work processes are less productive and slower. Low productivity will affect not only the workers themselves but also the company, which is not working at full capacity, thus limiting the profit of the whole company. Most importantly, the key points when it comes to deciding which activities in the process are worth improving and or determining which moments bring real value to customers will be very difficult to determine since there are no clear performance indicators. [75]

Lack of the system for recording requests is also a problem. Excel file can be a place where team keep track of requests, but it is very inefficient because it is easy to lose contact with the customer and he does not know for example the status of the task at the moment. The use of Excel leads to a number of limitations, such as the automation of emails or communication with the customer.

Lack of proper documentation will cause chaos a little bit later, especially when it's needed. The point in having a documentation allows companies to speed up the training of new employees, also helps to avoid mistakes, speeds up the work of teams and optimizes the consumption of resources. In addition, a well-structured and described process makes it easier for companies to grow because they know exactly what they need in what quantities and how to organize it, and the result is that it saves both money and time. [76]

Once the weak points of the process have been mapped out, it will be possible to start improving them and begin to make actions have value.

6.6 Process "TO BE" state

Once all the objectives, principles, roles and their responsibilities, as well as an analysis of process weaknesses have been identified and thoroughly documented, the TO-BE state creation phase should begin. Together with the manager of the LTT team as well as the process management specialists, both sides of the process were drawn up which include the call center side and the "Jira and Confluence" side.

Call Center side of the process depends on how the customer contacts the call center. If the customer registers a request by phone, the call center specialist does not need to check

whether the request has already been registered, because this can be found out immediately by asking the verbal customer whether he has registered a similar request or whether he has previously asked a similar question. After the duplicate question has been solved and it has been found out that the same request is no longer in the system, the call center specialist continues to ask the customer for the necessary information and enters it into the Jira fields immediately. In order to avoid data loss, all fields will be made mandatory and it will be impossible to create a request without filling them in, i.e. the support specialist will ask for all the necessary information needed to fill in the request.

If the client contacted the call center via e-mail, then first it will be necessary to check the request for the presence of duplicates. This will be done with the help of a special table made in Jira, to which the call center specialists have access and with the help of three key data they will be able to check whether such a request has already been registered or not. In case of missing information, the call center specialist will contact the customer via phone or e-mail and clarify the missing data. Once all data has been received, the request can be registered in the Jira system.

The Jira side of the process has a few things that need to be mentioned. After a request has been registered in the Jira system, it should be automatically forwarded to the designated specialist. In turn, the specialist should receive an e-mail that the request has been sent to him. After the request has been created, the SLA starts working immediately, which counts the two parameters Time to first response and Time to resolution. Also, in order to keep clients informed about the status of his request he will receive an automatic e-mail in the following cases: when the request has been commented changed status changed assignee or received a final resolution. Moreover, the specialist should have a special status that he can send the request where after 2 days he will receive an automatic reminder to return to this request. This is necessary so that third party bodies that cooperate with the LTT team can fulfill their part of work when requested by the LTT team. The specialists should also have uninterrupted access to the documents stored in Confluence. After the request has received a final resolution, it should be moved to a closed status where it can no longer be edited and all parameters are saved. Also, in order to prevent specialists from accidentally editing fields and thus causing data loss, it was decided that specialists will not be able to edit the request themselves, they can do it only through managers, to whom it will be necessary to address with explanations why it is necessary.

6.7 Process Execution Stage

Once a unified picture had been drawn up and everyone had a common idea of how the process should work and what activities would be included in it, as well as how it was explained what real benefits they would bring. During the creation of the concept, consensus was also reached on some of the disagreements that had arisen along the way to create the "TO-BE" state. Once all stakeholders were in agreement with the state presented, it was decided to proceed with the implementation of the created solution.

If in the course of the case any possible improvements to the process were found that had been overlooked for some reason in the past, they were also immediately applied in the execution phase (if all stakeholders had agreed).

6.7.1 Jira and Confluence side of the process

This subchapter will include customization elements in Jira and Confluence to better understand the built process. On the Jira side, the most important topics such as workflow, screens, fields, notifications, user permissions will be covered. Confluence will be a set of pages where the LTT team will be able to share knowledge and output the results of the meetings. A Jira workflow represents the process for team that uses to take an issue from creation to completion [77].

The workflow represents the life cycle of a ticket in the LTT project and has a similar structure as shown in Figure 16. In the overall workflow context, most of the notifications such as status changes or adding comments are automated within the workflow. Thus, the specialists do not have to worry about sending individual notifications to customers manually via e-mail, as this is all done automatically. The client can also click on the link at any time and see the status of his request.

A screen is a set of system-created or manually created fields that can contain certain types of data, for example, the field type «drop list» or «free text». There are three types of screens in Jira: create screen, edit screen and view screen. Due to the requirements of the LTT project workers it was decided to use the same screen everywhere. The main advantage over Excel is that the screen does not allow to randomly move fields and it makes them all mandatory to be filled in otherwise the ticket cannot be created.

Moreover, about 60 new fields were created for this project, which were fully utilized and consisted of different data types. The most important limitation of these fields is that it is impossible to enter another data type in them and still successfully create a ticket. For example, in the field related to date it is impossible to put any word or number, the system simply will not let to write it.

In order to avoid errors in request fields it was decided that only project administrators who are LTT project managers will be able to change fields available in requests. In this way additional control is put in place to avoid potential errors and hasty corrections in requests.

All of the above measures are aimed solely at reducing the number of errors, increasing the efficiency and work of the team and reducing manual work.

The next important part of working with Jira inside the process is the possibility to use built-in reports that can show the desired indicators. After discussion with the LTT team manager, it was decided to create reports to better track the progress of workers, as well as to look at SLA compliance, total time to resolve requests, and the number of requests resolved by type of request and by worker. As a result, the following report types were created in Jira: “Workload”, “SLA goals”, “Created vs Resolved”, “Time to resolution: by issue type”, “Time to resolution: by assignee”, “SLA success rate”, “SLA met vs breached”, “Resolved by issue type”, “Resolved by assignee”.

With the help of these reports, it will be possible to quickly and easily assess the efficiency of an employee, the total number of requests and time to resolution and also to find out why some requests take more time than others and according to this figure out how to optimize them.

Confluence represents a place to store general documentation, notes and so on. In order to make it easier to use and clearly divide documents, folders were created for easy structuring of documents. Thus, there are folders with training materials that will be useful for new employees. There are also plans to create a request page where employees can write down their wishes about what could be improved in the process or changed based on their experience. In addition, if the team wishes, it will be possible to produce retro perspective meetings that will show the progress and development of the team for certain periods, on the basis of which it will be possible to gain valuable experience.

6.8 Process Monitoring and Control

After all the activities in the execution phase have been done, the monitoring and control stage begins, where it will be determined how the process actually works, what indicators it produces, how efficient it is and what potential items for correction can be proposed.

6.8.1 Key Performance Indicators

KPIs are basic metrics that can help to properly evaluate the effectiveness of the process and the quality of the services provided to customers. KPIs depend on the project objectives, but since the process is related to solving customer requests, the list of KPIs has been updated with help of the experts and now contains some new elements:

- Achieve a high level of customer satisfaction (minimum 4 out of 5 points).
- Provide 95% coverage in the form of SLA: first response time and time to resolution.
- Increase the rate of successfully resolved requests to 90%.
- Achieve high Net Promoter Score (NPS) – minimum 8 out 10.
- Increase employee satisfaction by reducing the manual tasks.
- Achieve a high level of team collaboration.

It is important to note that these indicators are based on 100 requests. For example, a first response time of 95% means that 95 out of 100 requests must comply with this SLA requirement and be taken up before the SLA expires. The same with customer satisfaction, i.e. a score of 4 out of 5 means that an average of 100 requests should have a score of four or higher from customers and with NPS everything works the same way. The data obtained from KPI data will help to better understand what was done with requests and what specific results it led to. Based on this data, it will be possible to more thoroughly evaluate the efficiency of employees, as well as to look at areas that need improvement.

Tracking of all the above KPIs will be organized through Jira, which will automatically collect data from requests every 15 minutes and based on this data, build various charts

that will show whether the indicators meet the set goals or not. In this way, the LTT team manager will be able to quickly and efficiently receive all the necessary information and, based on it, make a decision on the necessary changes if any indicators have not been achieved.

6.8.2 Process Efficiency

In order to correctly assess the effectiveness of the process, it is necessary to take into account two things: metrics that are tracked in the process, as well as the motivation and effort that workers have. Based on these two things, it will already be possible to say whether the process is working effectively or not.

If the situation with the process metrics is more or less clear, the motivation of employees and their efforts should be taken care of more. To ensure a higher level of employee motivation, three times a week stand-up meeting will be held where each employee will be able to express what he/she thinks should have been improved in the process and how it will affect the overall result, moreover, at the stand-ups employees can share the problems they faced in the course of solving requests.

6.8.3 Feedback collection

Feedback is collected from two sides: from the side of the clients who use the project and make requests with it and from the side of the worker who will see the backside of the project.

The collection of customer feedback is organized in the form of a short questionnaire, which is automatically sent to the customer's email after their request has been solved. This is realized thanks to the inbuilt functionality that Jira has. In the feedback form, the customer can give a rating from 1 to 5 and also write a small comment about what he liked or disliked in the course of solving the request. On the basis of this data statistics will be formed, which will further improve the process and make it more convenient and reliable for the customer.

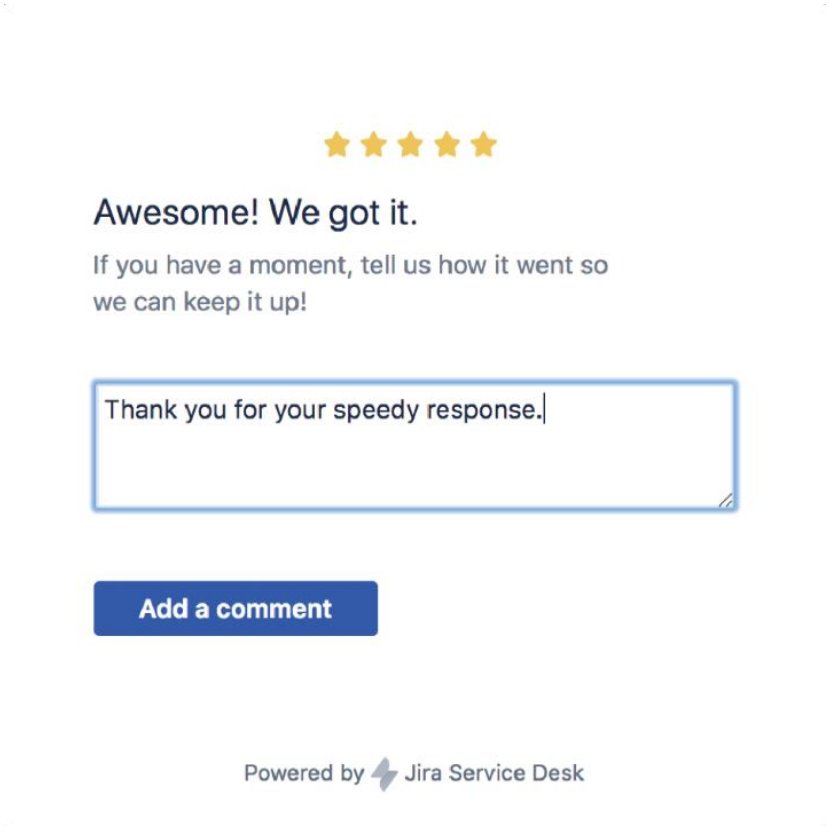

Figure 11. Example of the customer feedback form [78].

All employee feedback is collected through internal meetings that take place once a week, where it is possible to summaries the results of solved requests and suggest improvements that contribute to the efficiency of the process. All employee feedback must be documented in order to track the process of project changes and compare statistics, and moreover, to draw conclusions on the basis of which it will be possible to understand whether the change has brought any value to the project or not.

6.8.4 Customer's satisfaction

The level of customer satisfaction is an important indicator of how well and efficiently the process works. Based on the information obtained from the statistics, the following changes were made in the project in order to improve the level of customer satisfaction:

- If the request is registered via e-mail, the client will receive notifications that his request has been successfully registered.
- Added notifications for anyone the client can add to the "request followers".

Since there are no customer satisfaction statistics for the period of time the LTT team used Excel, because Excel did not offer the opportunity to collect feedback, or there was no organized feedback collection, it is not possible to make a comparison at this time. However, during the time that the LTT team has been using Jira and collecting feedback from customers, it is a fact that the average feedback has reached 4.2 out of 5. The result fully satisfies the previously set KPI targets so it can be seen that the team is moving in the right direction.

6.9 Process Improvement

This stage is the last and will be cyclically repeated when all activities in the project have been recorded, analyzed, completed and are now under control, it is possible to proceed to continuous process improvement. The technique that will be used for continuous process improvement is kaizen. That means that on the basis of the already obtained data and high level of the teamwork within the process, it will be possible to draw conclusions, which activities bring value to the enterprise and which do not. Based on this data, improvement with involved people should be made. Moreover, this data can be obtained in any form in the form of feedback from the customer or from the employee. It is also important to take into account the development of technologies, which in turn provide great opportunities for automation and acceleration of services. As kaizen confirms, the main points are the cooperation and teamwork, so process could constantly get better.

6.9.1 Process automation

The automation of the process depends entirely on the application used and its capabilities. in this thesis, the main application is Jira and Confluence, so it is their functions that will be used for all sorts of optimizations. According to experts the most common problems with business process automation are that both those solutions are slow and too complex This means that they involve too many different applications and information. But since in this thesis the date will not go beyond Jira and Confluence (the exception is the reports), in this way the main challenges for successful business process automation can be avoided.

Based on feedback from the employees, Jira has been fully configured to automatically send an e-mail to the client when a request is registered, when a comment is added to the request, when the request is paused or when the request is resolved. Also, one of the

automations now automatically assigns an assignee to solve a certain type of task. The assignee will immediately receive an e-mail that employee has been assigned to solve the request.

Confluence is used in the work to provide a place for documentation and opportunities for training as well as for fixing difficult moments in solving requests. In this way, the results of all standups as well as important feedback from employees and customers will be described in Confluence, where any LTT team member can review it at any time and analyze it and possibly come up with some new optimization.

6.9.2 Speeding up service

Speeding up operations and service delivery can be achieved in several ways. One of them is automation, which was described above, and the second is competent training of an employee who is able to use the available tools 100%. Experience and practice are a very important part of the work, because the more experience an employee has, the faster employee will solve requests. Therefore, it is very important to spend enough time training employees, explaining how the application is organized, how it works and what it can do. In order to share experience and various tricks, such as shortcuts, employees will have a separate page in Confluence where they will be able to describe all of the above.

7 Result's analysis and validation

After the process has been optimized using the framework created in this thesis, it is necessary to make sure that the results obtained are correct and to verify the data obtained during the research. For the most honest and objective comparison of the process before and after applying the framework, it is necessary to consider key metrics and also to find out the general opinion of employees who have moved to the new working environment. To validate and analyze the results, it is necessary to evaluate how things were before the framework was implemented and then evaluate how well the framework solved the process problems, as well as to find out the opinions of the process participants about the changed process and its effectiveness. Thus, the following analyses were done to obtain confirmation of the performance of the framework:

- Validation and analysis of the pre- and post-framework process data
- Analysis of the process improvement results
- Analysis of the employee survey results

Based on all 3 available methods of analysis, it will be possible to draw a definite conclusion whether the framework works or not.

7.1 Validation and analysis of the pre- and post-framework process data

In this chapter the data of the pre- and post-framework will be compared. For a more objective assessment, average data in table 4 was taken for the year 2024 from January through May, when the framework had already been introduced into the project and had been used. The comparison will be made with the pre-framework data for the last 4 months of work in Excel. However, it is important to note that some data hasn't been collected while LTT have been using Excel, so it will have marked as "Not Available" in the table 4. Also, in table 4 there is a column with planned goals, which will allow to compare the actual results together with the new and expected results. Using this

comparison, it will be possible to understand how much the performance has improved or deteriorated compared to expectations.

Table 4. Framework effectiveness evaluation

Key Performance Indicator	Pre-framework data (from Excel times)	5 months after implementing the framework	Planned goal
Number of resolved requests	567 requests	647 requests	600 requests
Number of hours worked on the request	Average ~2,5 hours	Average ~1,6 hours	2 hours
Rate of successfully resolved requests (in %)	84,3%	98,6%	90%
Coverage in the form of SLA (in %)	Not available	99,7%	95%
Level of customer satisfaction	Not available	4,2 / 5 based on 212 feedbacks	4 / 5 based on 100 feedbacks
Average Net Promoter Score	Not available	10 / 10 based on 190 feedbacks	9 / 10 based on 100 feedbacks

Based on the data in Table 4, it can be seen that the changes have become positive trends. Together with the implementation of the framework, the number of solved requests, the number of hours spent on solving requests and the percentage of successfully solved requests have increased significantly.

The number of solved requests increased from 567 on average per month to 647, which is an increase of almost ~14%, which is an excellent result. In terms of requests resolved, the LTT team also exceeded the target, resolving 47 more requests per month than expected.

In addition, on average, employees spent less time on resolving requests since the time decreased to resolve the requests decreased from 2,5 hours to approximately 1,6 hours or about ~1 hour less in total. This indicator exceeds the set goal for this KPI by almost 24 minutes on average per request.

Moreover, the number of successfully solved requests increased by 14,3% from 84,3% to 98,6%, thus it can be seen that due to automation the number of errors decreased and the number of correctly solved requests increased accordingly. After receiving a result that was 8.6% above the objective set, it was ultimately decided to raise the minimum to 97%. This is due to the fact that the LTT team is doing a great job and will hold itself to the same high standard. For the next 3 indicators, the results from Excel times are not available because they were not taken into account at that time, so it is only possible to compare the available data that appeared after the introduction of the framework with the set targets. Coverage in the form of SLA (in %) - The achieved result for 4 months showed that it is possible to achieve almost full coverage of SLA due to more convenient application and the ability to track the time left to solve the request. Thanks to this convenient built-in timer, it became easier for LTT employees to correctly distribute the workload and achieve the set goals. Level of customer satisfaction - Based on 212 feedbacks it can be said that the result is satisfactory and there is still room for improvement. Nevertheless, the goal was achieved but there is still room for improvement. Improvement will be done by taking feedback from customers. Average Net Promoter Score - In the area of NPS, the LTT team reached the maximum score and the target was met. Thus, based on 190 feedbacks, all surveyed customers would recommend the LTT team to others with a very high probability. Also, based on the attached feedbacks also necessary improvements will be made.

This is due to the fact that the framework offers previously unavailable process improvement optimizations through the use of more modern tools that are aimed at achieving the process goal. Other metrics not listed in the table will be used in the process to compare between request types and to identify potential optimization opportunities. For example, if the average time to solve request type A is 2 hours and the average time to solve request type B is 1 hour, team should ask why this is the case and whether it can be accelerated somehow. This is exactly the kind of thing the author of this thesis will be doing when developing the project in the future.

To summarize, it is safe to say that the LTT team achieved all the set goals and became better as a result. The LTT team used all the technical advantages of Jira and Confluence with courage and followed the framework, which made it possible to achieve these results. Thus, it can be said that using the framework together with the right tools will deliver positive results.

7.2 Analysis of the process improvement results

This chapter will discuss the results of process improvement based on the identified problems in the process. Based on this solution of these problems, it will be possible to say with some certainty how good or bad the changes made to the process were.

One of the most important problems that LTT team had before the implementation of the framework was a large number of errors related to customer requests because all records were recorded in an Excel file. When the new framework was implemented, all requests were created on the basis of Jira, where it was made that all fields were mandatory and the problem solver was automatically assigned by the system on the basis of set conditions. and with the help of this the following problems were solved:

- Empty fields in the request: this problem has been completely solved because all fields of any request have been made mandatory and if they are not filled in, the request simply cannot be created.

- The problem that the request is solved by more than one person at a time: this issue was 100% solved with the help of automatics that automatically assigns assignee in case of a certain type of ticket.

- The number of repeated requests, i.e. duplicates, was reduced: his problem was solved by 90% with the help of a special board where all recently created requests were displayed and where a call-center specialist with data and determine whether this or that request has already been created.

- Moreover, standard emails were introduced to keep the reporter informed about the status of the request solution: now the reporter will automatically receive information on any action related to the request, for example, if the request has been commented on, changed its status, or the deciding person has changed.

The framework itself brought with it goals and objects for the team to strive for and now people have an idea of where they are going and why. In order to work more efficiently and effectively, KPI were defined to help people stay on track and identify their weaknesses, which can be improved later on.

Also, the transition to Jira has made it easier to track requests and allowed for more efficient organization of work. For example, now it is possible to see all recent requests of a certain type in one click and see who solved them, how long it took and what the resolution was. This greatly speeds up the manager's work and conserves company resources.

Moreover, one of the new features is SLA, which allows employees to track the amount of time spent on working with a request and also the time for which they had time to respond to the request. Thanks to SLA it became easier for the LTT team manager to track the amount of time spent by employees on one or another type of requests and to identify weaknesses. Also, thanks to the fat capabilities, various reports were made within the system that showed the performance of employees their efficiency as well as the number of requests that were related to the project. Previously all reports were made with Power Bi, while now it is possible to make them directly in Jira.

One of the most striking examples is the automatic assignment of the assignee to a specific ticket type, as well as automatic reminders when requests are due by the date set by the specialist. Thanks to this, the specialist will not need to remember all requests that have been paused, but will always be reminded of them and will be able to return to their solution.

7.3 Analysis of the employee survey results

As stated earlier, one of the most important parts of the framework is people. To better evaluate the effectiveness of the framework, it is necessary to first ask those who work directly with its methodology. It was also important to get the opinion of experts in the field of process management in order to assess the effectiveness of the framework in terms of methodology and workability. The results of the employee survey could be seen in figure 13 and represent statistics on the increased productivity of LTT team members.

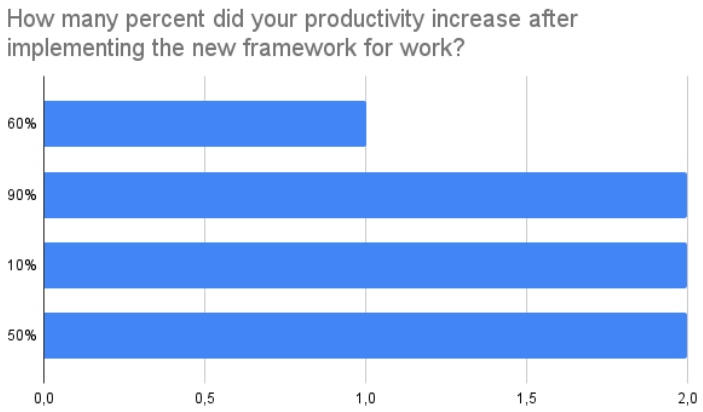

Figure 12. Feedback on team productivity.

As shown in figure 12, the Y scale represents the percentage increase in productivity while the X scale represents the number of people who chose this option. the survey offered to choose a response option from 0% to 100%, where 0% indicates that productivity has not increased in any way and 100% means that it has almost doubled compared to the original data.

It is important to note that most of the employees (5 out of 7) have increased their productivity by at least 50 percent or more, although it can also be considered a success that the overall productivity is even 10 percent. The most significant thing here is that productivity did increase after the framework was applied and the changes benefited the team. After processing these results it can be stated with certainty that indeed the productivity of the workers has been increased by meditating on the new framework, which means that it really works because the indicators have changed compared to what they were in Excel.

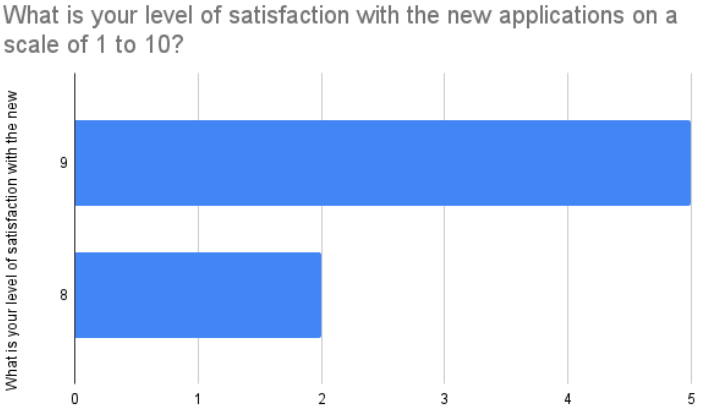

Figure 13. Level of satisfaction with the new apps.

Figure 13 shows that the Y scale shows the level of satisfaction with the new application, and the X scale shows the number of people who chose this answer option. The options from 1 to 10 were presented, where 1 means that a person is completely dissatisfied with the applications and 10 means that a person is completely satisfied with the use of the new applications. It is clear that the average level of satisfaction with the new applications seen by Jira and Confluence was about 9, i.e. most employees liked the new application well enough and were satisfied with its use. These results mean that the new application is actually more satisfying to workers than the old Excel, which really shows that the changes have been beneficial and the process has been set on the right course.

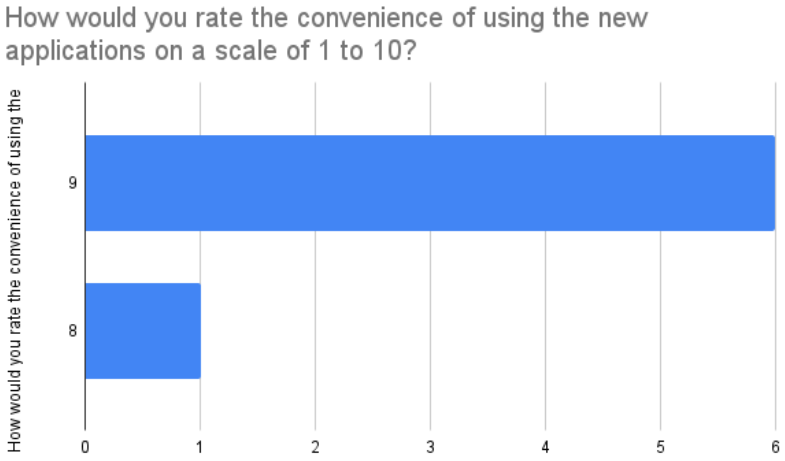

Figure 14. Level of the convenience of using the new apps.

Figure 14 shows that the Y scale shows the level of satisfaction from 1 to 10 and the X scale shows the number of people who chose this answer option. In this case, a score of 1 means that the applications are absolutely inconvenient to use and Excel is better at this point on this usage, whereas10 means that the applications is more convenient to use and exceeds Excel on this parameter. As it could be seen on figure 19, the average usability score is almost certainly 9 out of 10 and this means that compared to Excel the application is many times more convenient for LTT team members. Based on the current data and the data from the previous two questions, which were depicted in Figure 18-19, it can be concluded that the process changes and the move from Excel to more modern applications did benefit the LTT team.

The next data could be seen on the figure 15, which tells about average time to get used to the new applications is being overviewed now [Appendix 2]. It took the majority of the

team two to three days to adapt to Jira, the longest adaptation time was 5 days and the fastest adaptation time was 1 day. Perhaps the person with one day already had previous experience with Jira, so this worker had no problems with familiar applications, while the person who had never experienced Jira taken a little longer to adapt (about 2-3 days). These results show that even if someone uses Excel for a long time, it is possible to get used to new applications quite quickly because they are more user-friendly and more convenient than the same Excel.

Figure 16 shows that the main written feedback on the most important advantages of the new applications were mainly that they work well save the date more efficient and allow to work more productively, which once again emphasizes the superiority of Jira over Excel when it comes to recording user requests [Appendix 2]. The importance of this particular feedback now is that people started to mention more often that it is impossible to lose any date as well as more convenient and quickly possible to check the request. Specifically in the context of this thesis it means that one of its goals was achieved then from the fact that it can be seen that it really became easier and simpler to work, which was one of the goals of the process improvement.

On the figure 17, it was asked to point out the identified shortcomings during the time that LTT employees had time to work with the new applications [Appendix 2]. The main disadvantages were that it is difficult to check for duplicate tickets, while the rest of the team could not specify the exact disadvantages of the application. Besides, the author of the thesis took these shortcomings as opportunities for improvement and subsequently a table was created where employees could conveniently view all repeated requests, thus eliminating one of the most important shortcomings pointed out by the LTT team.

On the figure 18, LTT team workers were asked if they had experienced any problems with the new applications [Appendix 2]. The conclusion shows that most people, namely 6 out of 7 people, had no problems using the new applications, although one person noted that there were some confusing features at the beginning, but this was all solved later in the training process. From this it can be concluded that for most first-time users the application is intuitive and thanks to the availability of manuals and more experienced colleagues there are hardly any problems with using the applications.

Figure 19 shows the feedback given by the LTT team workers in which they could offer their options for features or possibilities that they would like to see implemented in Jira [Appendix 2]. So far, workers have requested e-mail reminders for missed tasks as well as a slightly more convenient way to export information about some requests. This makes it clear that the system still has certain undiscovered possibilities that we have made available to the LTT team and their realization will have to be addressed in the course of further development of the process.

It is worth noting that the author of the thesis took into account all the wishes of the employees, as well as the problems they faced and tried to solve them. Thus, to check for duplicates, a more convenient table was created where employees can quickly see if tickets with similar parameters have already been created and e-mail reminders were created for tasks that are triggered automatically after a certain period of time.

8 Further steps

After putting the framework into practice and getting positive results that framework is actually working, it was decided not to stop there. The following items will be done as further steps:

- Translate the manual for using Jira and Confluence into other languages, so more people could easily understand it. In order to make it easier for new users to use the new tools they will have to work with, it will be necessary to translate the manual into the native languages of most of the employees, such as Estonian, Latvian and Lithuanian. This way, workers who have a good understanding of what the tools are capable of will be able to give better feedback or make suggestions for improvement. Moreover, the next thing will be done in order to make process better as the time goes:

- Regularly collect feedback from the employees and make process improvements based on it. Once the employees are more familiar with Jira and Confluence, their project lead will be able to hold regular meetings where everyone can share thoughts or ideas that will improve the process.

- Create more detailed manuals will be necessary in the future. The more manuals a process has, the better and more aware the worker becomes of the process. After all, a worker who understands what he is doing and that his work matters will perform better.

- Add more automation with Jira such as scripts, bundled automation. Jira is constantly evolving and new updates are constantly being released for it, which contain improvements and new features, also for automation. These features should be used to continuously improve the process.

There is actually a lot of room for continuous improvement and this is just a small fraction of what could be done in the near future.

9 Summary

The main problem with this thesis was that the process that people were using was old and inefficient, moreover, it didn't exploit of all kinds of resources, it didn't make use of new technologies and it didn't have clearly defined goals. In general, using an excel file as a place to record customer requests or a database is not a good idea because it has a number of limitations such as limited ability to use automation, no checking for data integrity and multiple people solving the request in parallel. Over time, these limitations only hindered the work and did not provide any advantages. However, now due to the new modified process this has been completely transformed and no longer uses Excel as a basis and all the above disadvantages have been overcome.

The main goal of the work was to create and test a new framework that would help to successfully and as painlessly as possible to move from an Excel file to a full-fledged system for working with requests in the case of this thesis this Jira and Confluence. In the process of writing the work were analyzed other possible solutions to the problem, also was studied a lot of scientific literature on the topic of creating frameworks were also conducted interviews with experts, which helped to get a clearer idea of what a good framework should look like, which optimizes and fits into the process so the author of the thesis was able to cover almost all stages of the creation of the process, then take feedback from workers after a couple of months of work in a new project and learn their opinion and the author of the thesis was able to get a clearer picture of the process.

In the course of the work the author of the thesis managed to find answers to the questions that have been posed earlier:

1. Is it possible to create a universal business process analysis and optimization framework for Service Desk projects?

The framework can really become universal under one condition: it is necessary to use appropriate tools for the enterprise to achieve its goals. It is important to note that the framework is more of a skeleton that can be relied on, but the specific actions depend on the needs of a particular enterprise.

Summing up the overall result of the work it’s possible to say that its goals have been fully achieved, the process has been improved and optimized and most importantly the work of people has become more meaningful better and more efficient. But the work with the process does not stop there, because there are still things that can be improved and LTT team should be ready to expect some new details that will be revealed in the course of their work.

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Appendix 2 – Surveys: the employee and the experts

Employee survey

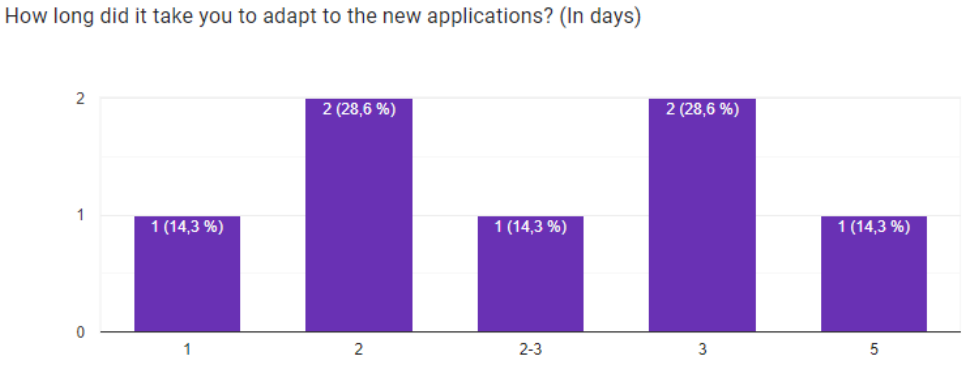

Figure 15. Adaptation period in days for the LTT team.

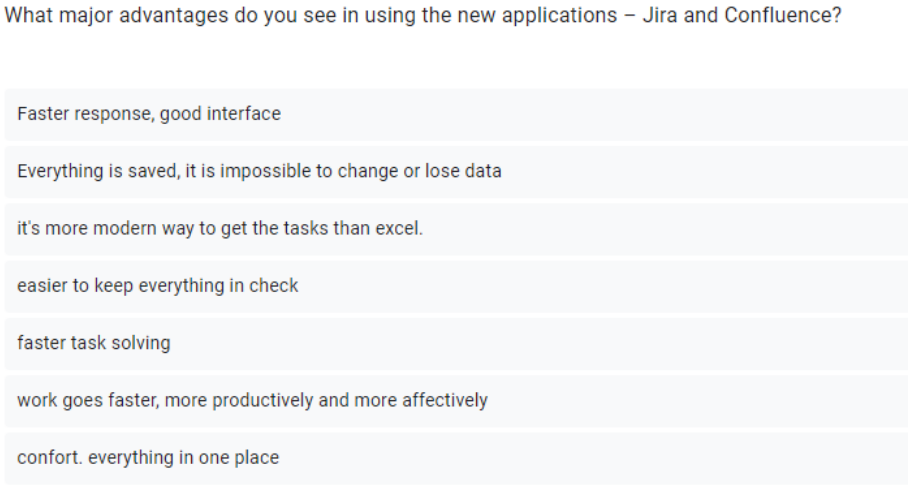

Figure 16. Written feedback about the advantages of the Jira and Confluence.

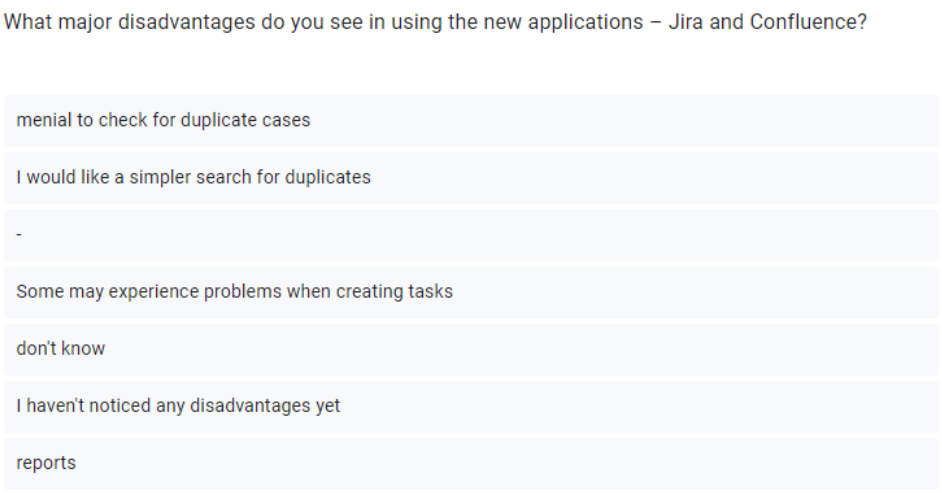

Figure 17. Written feedback about disadvantages of the Jira and Confluence.

Figure 18. Feedback about the problems while using Jira and Confluence.

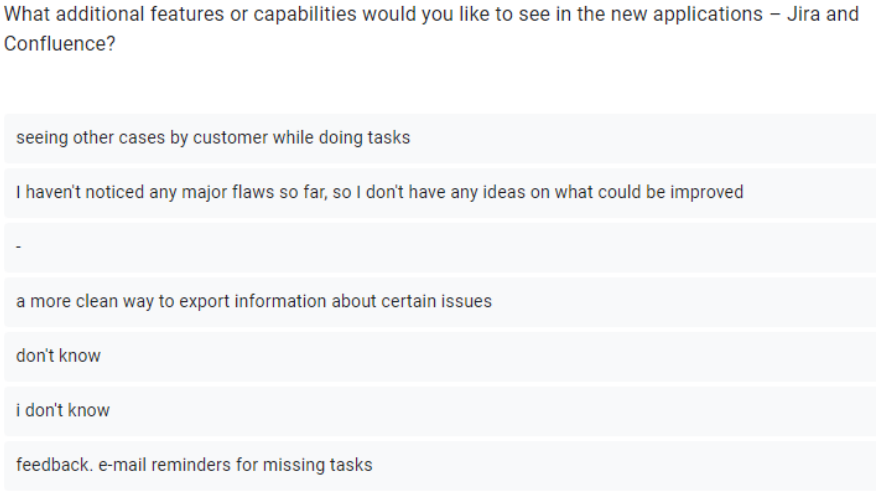

Figure 19. Feedback about additional capabilities for the future improvements.

Interviews with experts

Q – Question, E1 – Expert 1, E2 – Expert 2

Q: What is the importance of business processes to the success of an organization?

E1: described and modeled business processes are crucial to an organization`s success because they streamline operations, improve efficiency and and quality in operations. Also it gives you an insight what kind of roles and competences you need in your company.

E2: Effective business processes are the backbone of our organization, providing the organizational structure and support needed to hold everything together.

Q2: How often are business processes updated in your practice?

E1: Too rarely. It should be done at least once a year - even if the process dosen`t need to be updated, it should be validated at least once a year. but very often it is not done for years

E2: Processes are reviews once in a year and updated in case of the new requirements or changes occur impacting the specific process.

Q3: How do you determine which business processes need improvement?

E1: Decreased customer satisfaction, decreased process owner satisfaction.

E2: Every process has its goals and target area. Process Managers have their scope of processes which the take care of. Process Managers follow performance metrics, stakeholders feedback, process analysis and the changes and strategies in the organization.

Q4: How do you ensure that all stakeholders are involved in the modeling process?

E1: by identifying all relevant stakeholders who are impacted by the process. Scheduling workshops. Gathering feedback during modelling process

E2: Processes have roles and stakeholders defined and processes concern certain area. The main roles from the impacted area are also considered. They are invited to meetings, where the purpose and activities are explained.

Q5: What tools and methodologies do you prefer for analyzing and optimizing business processes?

E1: I prefer BPMN notification, tool is not important

E2: Business Process Modelling tools: draw.io and Aris are in use to visualize the workflows. I´m using mainly Lean Six Sigma and common sense :) as methodologies

Q6: What key performance indicators of business processes do you consider most important?

E1: Customer satisfaction, process owner satisfaction, feedback from employee involved to the particular process

E2: Performance metrics, quality metrics, customer feedback

Q7: What are the most common problems you encounter when analyzing business processes?

E1: Too many different stakeholders with different interest and resources

E2: There is no adequate data available for the analysis. Input for the analysis is necessary to collect via interviews, which lack clear objective

Q8: What do you see as the main challenges to successful business process automation?

E1: slow IT - solutions are too complex and involves too many different applications and data. People in the process have found different workarounds and they are not interested of chances

E2: Complexity of processes, lack of standardization, variety of existing systems, lack of money

Q9: What business process trends or innovations do you consider most important in the next few years?

E1: Chat GPT to be involved in processes

E2: AI technologies, agile methodologies, automation, customer value is strongly driving

Q10: How do you assess the difficulty of implementing this framework in an organization?

E1: It is difficult mostly because of people and management who are not interested of clearly described processes and polices.

E2: Organization should be clear what will be the strategy towards business processes and execute that strategy via well managed Organizational Change Management practice.