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IMPLEMENTING ROBOTIC PROCESS AUTOMATION IN SALES SUPPORT

Master's thesis
Faculty of Management and Business
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March 2023

ABSTRACT

Laura Lahtinen: Implementing Robotic Process Automation in Sales Support
Master of Science Thesis
Tampere University
Master's Degree Program in Industrial Engineering and Management
March 2023

Digitalization has been shaping the ways how we work and live for a considerable length of time. Businesses' competitiveness is partially determined by their capability to adopt and leverage new technologies. One of the latest trends in digitalization is the automation of repetitive, low-cognitive human tasks in white-collar jobs. A tool that was created to automate low-cognitive human tasks, Robotic Process Automation (further only RPA) utilizes software robots to address this topic. RPA gains attraction because it is easily scalable and implemented at a rather low cost and the use of it doesn't require prior programming skills. The implementation of RPA has been studied to some extent, however, the studies of implementation in sales and sales support are lacking. Notably, the automation of sales tasks is lagging far behind other business functions, even though a great deal of sales tasks could be automated. To address the limited understanding of automation in sales this study's objective was to investigate the impact special features on sales might have with automation on a practical level, and the influence of human factors in RPA implementation and addressing employees' commitment factors to ensure the use of RPA.

Reaching the targets of the study was ensured by answering the following research questions: 1) What are the prerequisites for the automation of sales support processes, 2) How to ensure employees' commitment to RPA, 3) What kind of resources are needed from the organization in the RPA implementation, and 4) How to prioritize the tasks to be automated with RPA. The study was conducted as a single case study at a Finnish technology company. The primary data was gathered through semi-structured interviews and the interviewees were all employees of the case company with a relevant role to the studied issue. Multi-sourced secondary data was used to ensure data triangulation and broaden the insights of the results provided. The data was analysed through a thematic analysis.

To understand the main empirical findings some prevailing facts must be known. First, RPA is to be utilised by the Sales Support team for the first time, but RPA is not new in the company. However, the Sales Engineers (further only SE) have been provided with RPA training before this study took place. Second, the RPA process at the case company relies on the individual users and their motivations as it is not mandatory for SEs to use RPA.

It was discovered that SEs' lack of motivation to use RPA is the main reason hindering the automation process in Sales Support. This could be addressed by increasing SEs' knowledge of RPA by improving the provided training courses and by naming a key user or users to support SEs with the automation design. The importance of the key user should diminish when the use of RPA stabilises. It is also suggested to make the use of RPA temporarily mandatory through KPIs because the voluntariness of use has not led to the adoption of RPA as intended. Lastly, the first tasks to be automated should be prioritized based on task simplicity, as it will support the learning of the individuals and minimize the risk of systems operations being compromised.

This study contributes to the literature by increasing the understanding of the factors affecting the new technology implementation within sales and confirming some prior findings in the rather new field of study. In practice, the findings of the study advise managers on how to deal with and support already overloaded salespeople in RPA adoption. The study also investigated the voluntary use of technology at work which has been previously associated with private life only in the literature but could be further studied in the future. The study despite aiming for generalisability covers only a niche area of sales and thus a general study of RPA possibilities in sales could be of interest.

Keywords: Robotic Process Automation, sales support, sales engineering, sales, new technology implementation

The originality of this thesis has been checked using the Turnitin OriginalityCheck service.

TIIVISTELMÄ

Laura Lahtinen: Ohjelmistorobotiikan käyttöönotto myynnin tuessa
Diplomityö
Tampereen yliopisto
Tuotantotalouden diplomi-insinöörin tutkinto-ohjelma
Maaliskuu 2023

Digitalisaatio muuttaa maailmaa jatkuvasti. Siksi myös yritysten kilpailukykyä määrittää osaltaan se, miten hyvin ne pystyvät omaksumaan ja hyödyntämään uutta teknologiaa. Yksi uusi teknologiatrendi on rutiininomaisten tehtävien automatisointi tietotyössä ohjelmistorobotiikan eli RPA:n avulla. RPA:n houkuttelevuus perustuu sen mataliin käyttöönottokustannuksiin, helppoon skaalautuvuuteen sekä intuitiiviseen käyttöliittymään, jonka ansiosta RPA:n käyttö on helposti opeteltavissa ilman ohjelmointitaustaa. RPA:n käyttöönottoa on tutkittu jonkin verran, mutta kirjallisuutta RPA:n käytöstä ja käyttöönotosta myynnissä ei löydy. Myynnin tehtävien automatisointi on muita liiketoiminta-alueita jäljessä, vaikka myynnissä uskotaan olevan paljon automatisointipotentiaalia. Lisätäkseen ymmärrystä myyntitoimintojen automatisoinnista tämä diplomityö tutkii myynnin erikoispiirteiden vaikutusta käytännön automatisointiin ja pyrkii ymmärtämään sekä inhimillisten tekijöiden vaikutusta RPA:n käyttöönottoon, että näihin tekijöihin vaikuttamista, jotta työntekijät pystyttäisiin sitouttamaan RPA:n käyttöön.

Tavoitteen saavuttamiseksi tutkimusaihetta lähestyttiin neljän tutkimuskysymyksen avulla: 1) Mitkä ovat edellytykset myynnin tuen prosessien automatisoinnille, 2) Miten taataan työntekijöiden sitoutuminen RPA:n käyttöön, 3) Millaisia resursseja RPA:n käyttöönotto vaatii organisaatiolta ja 4) Miten automatisoitavat tehtävät tulisi priorisoida. Tutkimus suoritettiin tapaustutkimuksena suomalaisessa teknologiayrityksessä. Ensisijainen tutkimusdata kerättiin haastattelemalla tapausyrityksen työntekijöitä, joilla oli tutkittavan ongelman kannalta olennainen rooli. Tutkimuksessa hyödynnettiin myös sekundääridataa datan triangulaation varmistamiseksi sekä tutkimustulosten tukena. Tutkimustuloksia analysoitiin teemapohjaisesti.

Tutkimuslöydösten ymmärtämiseksi tulee tapausyrityksen tilanteesta tietää enemmän. Ensinnäkin RPA oli jo käytössä tapausyrityksessä tutkimuksen alkaessa, mutta tutkimuksen kohteena olevalle myynti-insinööritiimille RPA oli uusi työkalu. Myynti-insinööreillä oli kuitenkin ollut mahdollisuus osallistua RPA koulutukseen ennen tämän tutkimuksen alkua. Toiseksi RPA:n käyttö tapausyrityksessä oli täysin yksilöiden varassa, eikä käyttö ollut pakollista vaan riippui yksilöiden motivaatiosta.

Tutkimuksessa havaittiin, että myynti-insinöörien motivaation puute on yksi keskeinen este RPA:n käyttöönotolle tiimissä. Motivaatiota voidaan parantaa kehittämällä tarjottuja koulutuksia sekä nimeämällä yksi tai useampi avainkäyttäjä RPA:lle, joka tukee myynti-insinöörejä alustavien automaatioiden teossa. RPA:n käytön vakiintuessa avainkäyttäjien merkityksen tulisi pienentyä. Koska vapaaehtoisuuteen perustuva käyttö ei ole johtanut RPA:n käyttöönottoon toivotulla tavalla, ehdotetaan soveltuvien suorituskykymittareiden käyttöönottoa, jotka tekisivät RPA:n käytöstä tilapäisesti pakollista. Lisäksi ensimmäiset automatisoitavat tehtävät tulisi priorisoida niiden yksinkertaisuuden mukaan. Tämä tukee paitsi yksilöiden oppimista, mutta myös ehkäisee riskejä, joita liian monimutkaisten tehtävien automatisoinnista saattaisi seurata.

Tutkimus täydentää aiempaa kirjallisuutta lisäämällä ymmärrystä tekijöistä, jotka vaikuttavat uuden teknologia, kuten RPA:n, käyttöönottoon myynnissä sekä vahvistaa joitakin aiempia löydöksiä suhteellisen vähän tutkitun aiheen piiristä. Käytännössä löydökset tarjoavat esihenkilöille neuvoja kuinka jo valmiiksi ylikuormitettuja myynnin työntekijöitä voidaan tukea RPA:n käyttöönotossa. Tutkimus sivusi myös vapaaehtoisuuteen perustuvaa teknologian käyttöä työympäristössä, joka on kirjallisuudessa vielä suhteellisen tuntematon ilmiö, joten aihetta voisi mahdollisesti tutkia lisää tulevaisuudessa. Vaikka tutkimuksessa pyrittiin tulosten yleistettävyyteen, keskittyi tutkimus hyvin kapeaan myynnin osa-alueeseen ja yleistettävämpi tutkimus RPA:n mahdollisuuksista myyntityössä olisi tarpeellinen.

Avainsanat: ohjelmistorobotiikka, myynnin tuki, myynti-insinööri, myynti, uuden teknologian käyttöönotto

PREFACE

This thesis marks an end of an era in my life – the long and experience-rich studies at the university are coming to an end. The studies equipped me with a great deal of knowledge and skills which I can leverage in my upcoming career. I'm at least as grateful for the people I've gotten to know at the university and who made the past years so memorable. I'll turn a new page in life cherishing everything that has happened during the past years.

I want to thank the case company for providing an interesting topic for this thesis and for the great support throughout the process. A big thanks also belong to Dr Tommi Mahlamäki for his professional guidance during the entire research process. Finally, I want to thank the most important supporters: thank you Ilari, family and friends.

Tampere, 28.02.2023

Laura Lahtinen

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LIST OF SYMBOLS AND ABBREVIATIONS

B2B	Business-to-Business
B2C	Business-to-Consumer
BPM	Business Process Management
CTO	Configure-to-Order
EIM	Equity Implementation Model
GUI	Graphical User Interface
IT	Information Technology
MOT	Make-to-Order
MVP	Minimum Viable Product
PCS	Product Configuration System
POC	Proof of Concept
RFQ	Request for Quotation
RPA	Robotic Process Automation
ROI	Return on Investment
SE	Sales Engineer
TAM	Technology Acceptance Model

1. INTRODUCTION

1.1 Background

Almost all aspects of our lives have become digital, and the trend continues – not least, the way of doing business is in constant change due to digital development (Reis et al., 2018). The emergence of new digital tools has enabled businesses to improve their efficiency, and accuracy, and reduce costs (Osman, 2019). Recently, the automation of repetitive human tasks (Leshob et al., 2018) and non-value-adding activities in a scalable manner has attracted increasing interest from corporates (Hofmann et al., 2020). A set of tools that meet these requirements are Robotic Process Automation (RPA) tools which take over the above-mentioned repetitive manual processes by robots created for this purpose (Fantina et al., 2021). RPA tools can be defined as "*a business process automation system that uses software tools to interact with existing applications and replace humans*" (Fernandez & Aman, 2021). A key distinctive factor of RPA compared to many other automation tools is that its use doesn't require programming skills. Lacity and Willcocks (2016b) say that the business process employees responsible for the task to be automated can be trained to develop the robots themselves in just a few weeks.

RPA functionality is based on the software robots (further only "robots") communicating with other Information Systems (Osman, 2019). Practically it means that the robots can access input systems, such as emails, then process the input using the determined rules and then use the output of the tasks it just performed as an input to another system, such as ERP (Lacity & Willcocks, 2016b). The core idea is to free up employees' time for issues that require human insight and are more complex when routine and repetitive actions are left to the robots (Fantina et al., 2021). This is believed to improve employee morale as there is more time for engaging, interesting work, often more directly related to customers (Madakam et al., 2019; Fantina et al., 2021). Many white-collar jobs, if not all, include these routine tasks that could be automated to reduce human error and improve efficiency (Fantina et al., 2021). Now businesses are increasingly interested in deploying RPA in their operations (Hofmann et al., 2020).

Achieving the benefits of RPA requires successful deployment and adoption of RPA. Literature has already acknowledged successful implementation examples of RPA in different businesses and proposed some criteria and tools to avoid the common pitfalls in

RPA adoption (Leshob et al., 2018; Osman, 2019). However, existing research is focused on certain business functions, such as auditing and accounting (Januszewski et al., 2021; Moffitt et al., 2018), which typically have a high number of repetitive, mechanical processes suitable for automation – according to Cooper et al. (2019), 10 to 30 per cent of all general accounting processes could be automated. There is an obvious research gap considering RPA adoption in business processes that are considered less routine and more customer-facing, such as sales.

There is a recognized need for the automation of repetitive and non-productive processes in sales to free up salespersons' time (Syam & Sharma, 2018). Automation of sales processes is not entirely new and literature acknowledges sales force automation being used to automate customer-facing processes and customer relationship management activities (Cascio et al., 2010; Speier & Venkatesh, 2002). However, depending on the offering and industry, the sales department often includes teams that support the salespeople engaged in customer interface by providing product or technical knowledge, for instance (Terho et al., 2022). Often the sales support team consist of Sales Engineers (SE) who have both technical knowledge and commercial skills (Reunanen et al., 2018). According to Vanwelkenhuysen (1998), SEs' main responsibility is to handle customer enquiries, which includes crafting a combination of technical and commercial offers based on the customer's requirements. This process presumably includes a lot of repetitive, rules-based tasks that could be automated using RPA.

This thesis focuses on the implementation of RPA in sales support processes. The target is to find out, how the work of Sales Engineers could be supported with RPA and how the implementation process should be carried out to achieve the maximum benefits of RPA. The research is conducted in one of the sales teams of a Finnish technology company whose core is in engine manufacturing, but it has a slogan of being "much more than an engine company" (UiPath 2019b). This company operates internationally and employs around 17 000 people worldwide. The company has two main business divisions which have their own sales functions. Sales functions are divided into front-end sales and several sales support teams according to the product line. This study focuses on one of the sales support teams of the other business division.

The case company has an established RPA team that centrally creates and maintains the robots and RPA is already in use in several business units and departments. Now RPA is wished to be implemented in Sales Engineering as well. The following overview of the current situation regarding the RPA process at the case company has been formed based on discussions with the employees and line manager of the sales support team in question and the case company's RPA experts. The business process employees are in charge of identifying the suitable tasks to be automated using RPA and also for creating the logic for automation. The RPA team creates and deploys the automation on robots based on the logic that is created by the business process people. The employees are provided with basic RPA training to introduce them to the tool used for automation and the RPA team stands for help when needed. Almost all the employees in the studied team have completed this training, but the deployment of RPA has not taken off even though employees have identified tasks that could be automated using RPA. Employees feel that they do not have time to familiarize themselves with RPA besides the actual work and thus the introduction of RPA does not progress.

This study aims to understand, how the employees should be supported in the RPA adoption as part of the RPA implementation plan. The research is not only of use for the case company but also addresses the discovered lack of empirical research and literature about RPA use and implementation in sales and sales support.

1.2 Research objective, questions, and scope

The case company has issues with identifying the sales support tasks and processes to be supported by RPA and successfully implementing RPA tools in the sales support team. Literature and research were discovered to have a gap on these same topics, so this study aims to create a framework that would systematically address the above-mentioned issues and that could be generalised as a common tool for RPA introduction in sales support. This research objective is approached through four research questions. `

To start with, an understanding of different sales support processes' suitability for automation should be created, especially about the back-end processes and from the Sales Engineering point of view. This requires a better understanding of the essence of RPA and the applications for which it can be used. According to Rutaganda et al. (2017), a common mistake preventing from achieving the benefits of RPA is a poorly designed Proof of Concept (POC) about the use case; automating the wrong task increases inefficiency and failure speed (Santos et al., 2019). So, it is essential to understand when RPA can be used, and evaluation of the potential use cases requires a good knowledge of the sales processes. The first research question is formed as follows:

RQ1: *What are the prerequisites for automation of sales support processes?*

In the case company, there have been problems to get employees to use RPA after they've attended the RPA training as they claim to lack the time to get familiarized with RPA. It has been proved that people tend to resist change (Basyal & Seo, 2017) and it is one of the major reasons to cause Information Technology (IT) project failures in organizations (Laumer & Eckhardt, 2012). Reasons for reluctance are diverse. In their research about RPA implementation in accounting, Amaka and Nnenna (2021) found that robots and automation cause fear among the affected employees, for instance, about robots weakening their position or taking over their jobs completely and the fear materializes especially if employees are not engaged and informed about the RPA implementation. From the sales team's point of view, Speier and Venkatesh (2002) found that salespeople's attitudes towards Sales Force Automation activities were positive before the implementation but the post-implementation attitude had changed into negative, being manifested as a rejection of Sales Force Automation tools, for instance. Employees do not always actively resist new technology, but sometimes it's about non-adoption, meaning that even though the technology is not taken into use now the door is left open to future use (Laumer & Eckhardt, 2012). The second research question aims to understand better the factors that influence the positive approach to new technologies and successful adoption, as studies are proving positive post-implementation feedback about RPA and successful reorganization of people previously employed on automated tasks to more productive tasks (Amaka & Nnenna, 2021; Asatiani & Penttinen, 2016). The second research question is as follows:

> **RQ2**: *How to ensure employees' commitment to RPA?*

As with any project, also RPA implementation requires resources. For instance, POC needs to be defined for possible RPA use cases before implementation to achieve successful outcomes (Carden et al., 2019; Rutaganda et al., 2017; Santos et al., 2019). The implementation can be facilitated and led by a dedicated project team as in Carden's et al. (2019) case study about RPA implementation. The role of management support in new technology implementation is also well-studied (Macri et al. 2002) and training is known to reduce resistance to changes (Becker, 2010). The third research question aims to understand, what kind of organizational resources are required to successfully implement RPA.

> **RQ3**: *What kind of resources are needed from the organization in the RPA implementation?*

As part of the successful implementation, a prioritization of the potential use cases is also required, for instance, according to feasibility and value (Flechsig et al., 2022). This study also aims to shed light on the factors that should be considered in the prioritization of tasks to be automated. The fourth and last research question is:

> **RQ4**: *How to prioritize the tasks to be automated with RPA?*

To answer the research questions a comprehensive literature review is conducted to discuss RPA, sales processes, and adoption of new technology to formulate a preliminary framework. The literature review is followed by an empirical study which will provide insights into organizational and individual factors influencing RPA adoption, such as employee attitudes towards new technology.

1.3 Structure of the thesis

The structure of the thesis is illustrated in below Figure 1. The thesis begins with an introduction in chapter 1 which explains the background and reasoning for this study and later presents the research questions and objective of the thesis. The introduction is followed by a literature review in chapter 2. This theory chapter is divided into three subchapters each of which discusses a different theoretical topic discovered to be relevant to this study. The topics discussed are Robotic Process Automation, sales processes and new technology implementation. Each topic is further divided into subchapters which focus on a certain aspect of the topic. At the end of the theory chapter, an RPA implementation framework is formed based on the theoretical findings and its functionality is tested later in the empirical part of the study.

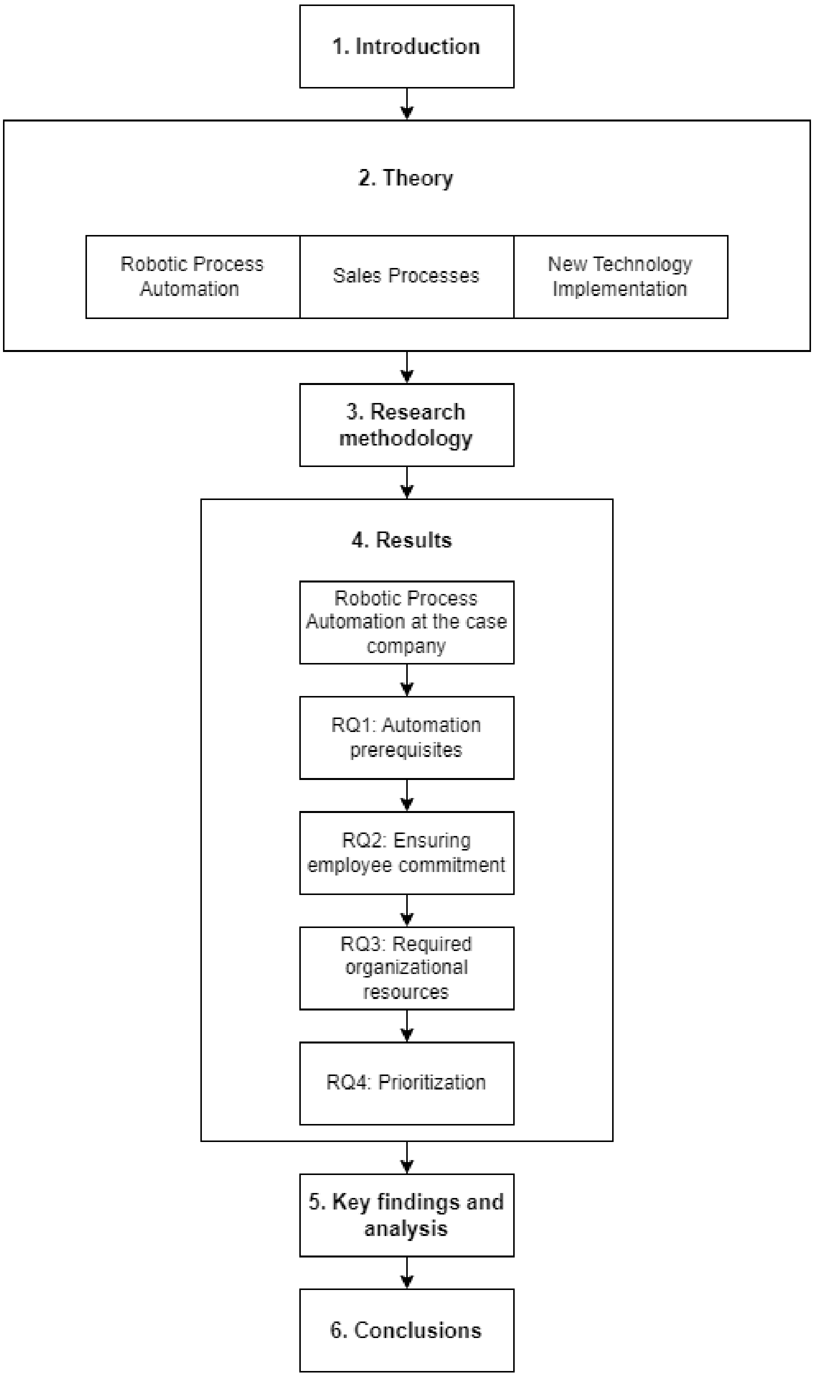


Figure 1 Structure of the thesis.

After theory, the research design and methodological choices are explained in chapter 3. The empirical study begins in chapter 4 by presenting the data gathered. The result chapter begins by discussing the RPA process at the case company and then the rest of the results are introduced in subchapters respective to the research questions. After the data is presented the results are analysed and reviewed based on theory and the main findings are introduced in chapter 5. The last chapter (6) concludes the thesis.

2. THEORY

2.1 Robotic Process Automation

This chapter begins by defining, what RPA is as a technology and discussing its properties and intended use cases. Also, other business process automation technologies are presented to help to understand RPA's position in the landscape. After the benefits of RPA in business and RPA implementation in business processes are discussed.

2.1.1 What is Robotic Process Automation?

Automation of business processes is not a recent phenomenon: starting at least from the 1990s organizations have tried to figure out, what tasks should be automated and what tasks to be performed by humans (van der Aalst et al., 2018). The dominant approach for automating business processes has been Business Process Management (BPM) which is an umbrella concept for techniques and methods designed for the efficient organization of business processes (Mendling et al., 2018). BPM is a large portfolio of practices used also for finding solutions for process improvement and decision support (Osman, 2019). BPM automation systems rely on the classical "inside-out" approach to improve processes, meaning that the new system is developed from scratch and integrated into the existing IT infrastructure, often requiring some tuning of the existing systems as well (van der Aalst et al., 2018). This makes BPM projects quite expensive and the use of BPM tools needs extensive programming expertise from users (van der Aalst et al., 2018; Lacity & Willcocks, 2016b). Due to the costly implementation, it is best to have many cases with a similar structured process to make the automation economical. This limits the applicable use cases of BPM to only a few even though there is usually a lot of repetitive work suitable for automation in an office environment but which is not frequent enough to justify automation cost-wise. (van der Aalst et al., 2018) That is where RPA comes in: a tool with the primary focus on automating tasks which can be deployed with little investment (Osman, 2019). Figure 2 below illustrates the relationship between BPM and RPA and the properties of tasks their suited for.

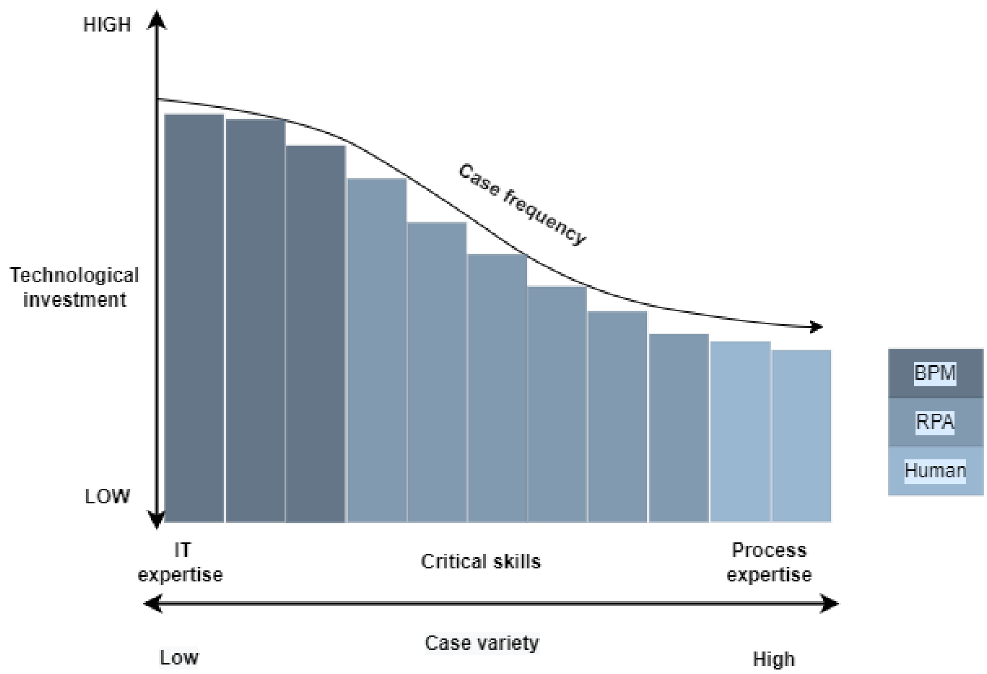


Figure 2 Relation between BPM and RPA (adapted from Lacity & Willcocks, 2016b; Santos et al., 2020 and van der Aalst et al., 2018).

Figure 2 shows that RPA continues from where BPM ends. BPM automation is based on reengineering the process which requires creating a whole new application which then interacts with other applications (Santos et al., 2019). RPA aims to automate existing processes performed by humans using existing applications making it feasible for cases that wouldn’t work with BPM (Lacity & Willcocks, 2016b; Osman, 2019). BPM fits best for processes which are owned and governed by the IT department, such as big enterprise-wide systems like ERP and CRM. RPA, on the other hand, benefits from process-specific knowledge (see Figure 2) and it best suits processes that are owned and operated by the business functions. (Lacity & Willcocks, 2016b) So, RPA will not replace BPM but complement the toolset for organizations’ automation needs. The “end of the long tail” in Figure 2 represents work that is infrequent or exceptional and handled in an ad-hoc manner which will remain to be done by human employees (van der Aalst et al., 2018).

According to Financial Express (2016), RPA is a set of automation software tools companies use for repeat processing and performing low-end tasks without human involvement (Fernandez & Aman, 2021). Along with other newer business process automation approaches it has emerged due to the advancements in the field of Artificial Intelligence, Machine Learning and distributed systems which have provided the foundation for new automation technologies (Mendling et al., 2018). RPA technology is based on software robots (Engel et al., 2022). Typically robots remind us of physical electromechanical machines, but those can be also software-based as in this case; a robot is just any kind of machine that replaces a human resource (Lacity & Willcocks, 2016a). Software robots will take over a big share of white-collar jobs in the same way that physical robots have replaced blue-collar jobs (Madakam et al., 2019). Robots can have a different basis for action: RPA works on rules-based robots but there are also learning-based robots which improve by learning from data. Automation that is implemented using learning-based robots is called cognitive automation. (Engel et al., 2022) To bring some clarity to the available business process automation tools the key characteristic of each have been assembled in Table 1.

Table 1 Characteristics of different business process automation approaches (adapted from Engel et al., 2022; Lacity & Willcocks, 2016a).

	BPM	**RPA**	**Cognitive automation**
Data	Structured	Structured	Structured & unstructured
Processes	Generic software packages (rules-based)	Rules-based	Inference- or learning-based
Outcomes	Deterministic	The single correct answer, deterministic	Set of likely answers, probabilistic
Level of IT implementation	Heavyweight	Mostly lightweight	Light- to heavyweight
Primary automation target	Non-cognitive knowledge & service work	Non-cognitive knowledge and service work	Cognitive knowledge and service work

While BPM relies on an "inside-out" approach, RPA uses the opposite "outside-in" approach where the existing IT infrastructure remains untouched, enabling implementation with little investment. From Table 1 we see that RPA requires only lightweight IT implementation, meaning that it acts at the graphical user interface (GUI) -level and is driven by non-IT employees whereas tools requiring heavyweight IT (such as BPM, see Table 1) the implementation is driven by IT experts. (Engel et al., 2022; Osman, 2019) In other words, employees working in the business processes with the skills and competencies in that substance but not in programming can be rather quickly trained to automate processes with RPA while tools with heavyweight IT require programming expertise. The "outside-in" approach means that the software adoption is not managed by the IT department, however, RPA must be consistent with the organization's IT governance and thus the adoption cannot be totally outside the control of the IT department. (Lacity &

Willcocks, 2016b) RPA software is “non-invasive”, meaning that there is no need to develop extensive platforms to acquire RPA, but it just sits on top of existing systems (Fernandez & Aman, 2021; Lacity & Willcocks, 2016b).

From Table 1 we see that RPA works with structured data, which means that the data is organized in a consistent structure that allows running queries on it to retrieve information for organizational use; the data has a definite format and length and it is easy to store (Eberendu, 2016). The type of data is important as RPA cannot process unstructured data, such as images and emotions (Desai et al., 2021) but cognitive automation tools can. Structured data can be processed and analysed using statistical and mathematical methods (Rabin et al., 2020), which fits the rules-based operating principle of RPA. According to Osman (2019), the quality of data is a vital aspect of RPA applications to ensure the correct functionality of the robots. This also sets a boundary condition for the tasks to be automated as all data must support the same format and be electronic (Osman, 2019). If data comes from different sources and with different labels, it needs to be standardized before RPA usage (Moffitt et al., 2018). In general RPA implementation is less risky with standardized and mature processes, meaning that the process is stable and results are predictable (Leshob et al., 2018). Tasks that require human judgement and have uncertain outcomes are better for probabilistic approach-based automation (see cognitive automation in Table 1) (Moffitt et al., 2018).

So, feasible processes to be taken over by RPA are rules-based, non-complex, standardized and executed in high volumes (Moffitt et al., 2018; Rutschi & Dibbern, 2020). It remains to be clarified, how RPA works. Syed et al. (2020) state that RPA robots mimic human behaviour, following the manual path taken by the user through a range of computer systems to perform a certain business process. The robots can be seen as digital workers each of which is using its own username and password to access systems, similar to human employees (Kokina & Blanchette, 2019). RPA robots work autonomously by interacting with multiple systems and making easy, binary decisions that don’t require intelligence unless RPA is enriched with AI features which enable more complex decision-making (Kokina & Blanchette, 2019; Syed et al., 2020). Simple RPA mimics human behaviour whilst cognitive automation mimics or augments human judgement (Hegde et al., 2017). RPA and cognitive automation tools are also highly synergetic when used together and when used in tandem the automation possibilities are extended (Lacity & Willcocks, 2018, pp. 57-58). In this study, we focus on the traditional, non-AI enriched version of RPA as it is where organizations often start automating their processes (Lacity & Willcocks, 2016a) and therefore it is suitable also for this context as the case company is trying to launch RPA in the sales support team. In below Figure 3, an example of an RPA automated process is presented to illustrate the operating principle of an RPA robot.

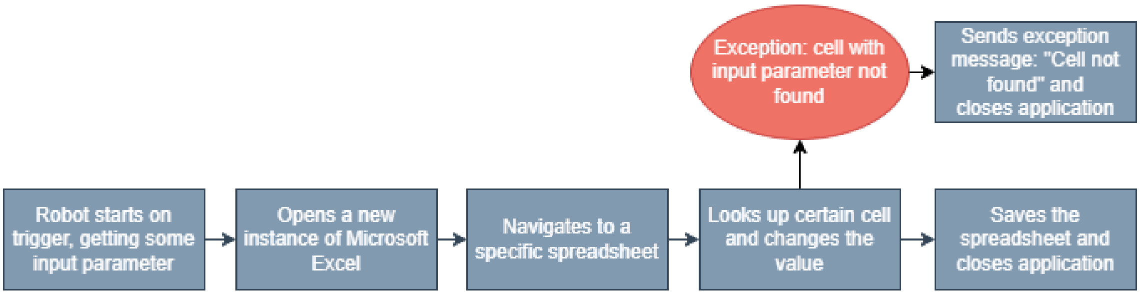


Figure 3 Simple example of an RPA process (adapted from Fantina et al., 2021; Hoffman et al., 2020).

As shown in Figure 3, RPA communicates with the systems the same way as humans do, so via the front end while traditional software communicates with other systems via the back end and data layers (Asatiani & Penttinen, 2016; Kokina & Blanchette, 2019). RPA works based on pre-defined rules which follow the routine of a human employee performing the task (Flechsig et al., 2022; Rutschi & Dibbern, 2020). The example in Figure 3 is very simple and the steps in the process are easy to transform into automation logic. With more complex processes the execution of the same task might vary between individual employees and thus it's important to find a standardized way of performing the routine and embed tasks as scripts to transform the human routine into a robot-automated routine (Rutschi & Dibbern, 2020). All processes have exceptions (see Figure 3 for example) which must be considered in the process design as the robot follows the rules unwaveringly and in case of an exception, it is unable to process if an exception handling is not determined. Despite careful design, no application will run smoothly all the time and that's why the robot must indicate somehow, e.g., by sending an email to the responsible person that it has completed its task (Fantina et al., 2021). The rule of thumb is that one robot performs one process and once the process has been fully implemented in the robot no changes will be made unless an error occurs or the environment changes (Lacity & Willcocks, 2016a).

An archetype of an RPA task is transferring data from one source to another as in the simplified example in Figure 3. Often the input is processed – again, based on the rules – and the result is entered into some other software system (Engel et al., 2022). These kinds of processes are in many sources (e.g., Engel et al., 2022; Lacity & Willcocks, 2016b; Syed et al., 2020) described as "swivel-chair" -like tasks, which means mechanical and repetitive work with little or no need for human intervention. Clarity of the process helps also in the development of automation, which can be done by the employee whose tasks RPA will take over. Lacity and Willcocks (2016b) describe RPA development as a “drag and drop” -process since the users don’t need to write code but only drag and drop icons and the code is automatically generated in the background. Some RPA software also allows automation to be developed using a record function, which records the user performing the task and based on the recording generates the automation logic for a robot (Moffitt et al., 2018).

Even though RPA development doesn’t require specialized programming skills, an understanding of information system functionalities is required, such as the structure of rule-based logic (loops, conditions and so forth), how the data is used and the interfaces of the applications used in automation. That’s why it is often beneficial that business operations and IT functions cooperate in RPA development. (Hofmann et al., 2020)

2.1.2 Impacts of Robotic Process Automation

The benefits and challenges of RPA are quite well covered in the existing research. Before discussing those further this chapter starts by summarizing the features of RPA presented in chapter 2.1.1. The summary is built upon four main themes which are shown in Figure 4 below in grey.

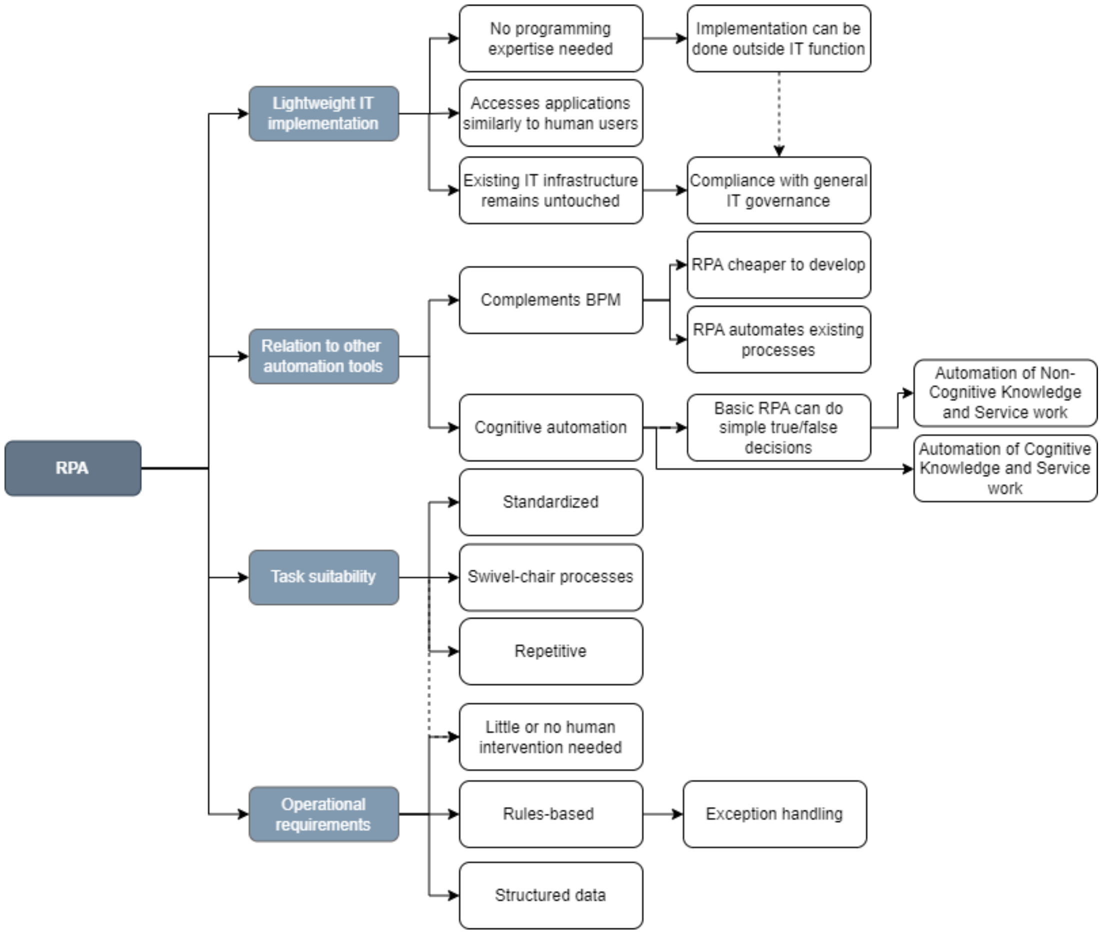


Figure 4 Features of RPA.

As seen in Figure 4, the level of IT implementation is an important aspect of RPA and it yields one of the most common benefits recognized in RPA adoption, which is cost savings. Because RPA is non-invasive technology (Madakam et al., 2019) which is implemented on top of the existing IT infrastructure requiring no changes in the existing systems it is quite cost-effective to adopt (Asatiani & Penttinen, 2016; Engel et al., 2022). In comparison with other automation alternatives, RPA has very competitive adoption costs and shorter implementation time and also maintaining costs are relatively cheap enabling savings in an organization's total IT service spending (Asatiani & Penttinen, 2016; Fung, 2014). After RPA implementation there will be cost-savings also from human resource-related costs: depending on the source, RPA is claimed to cut 20–50 % (Syed et al., 2020) or even up to two-thirds (Fung, 2014) of staff-related costs, compared to a situation where all manual tasks are performed by a human. The numbers are based on robots replacing full-time equivalent employees (FTEs) and one FTE is equal to one employee working full-time on a task (Asatiani & Penttinen, 2016; Syed et al., 2020).

Asatiani and Penttinen (2016) suggest that RPA might also possess an alternative to traditional outsourcing of non-core and routine activities. Both options help to reduce human resource-related costs and focus on core operations, but whilst outsourcing has some hidden costs of management and problems with complex service level agreements, RPA enables eliminating these challenges and keeping the benefits. (Asatiani & Penttinen, 2016; Fersht & Slaby, 2012; Madakam et al., 2019) Robots are also not limited by working hours but are available around the clock with lower costs than human workforce (Driscoll, 2018; Fung, 2014; Syed et al., 2020) which has positive impacts on productivity (Asatiani & Penttinen, 2016).

Cost-savings are part of the improved operational efficiency achieved with RPA. Other metrics of efficiency are a reduction in time and manual workload and increased productivity. These factors have a positive interdependence as the reduction of manual tasks leads to better time efficiency in terms of reduced waiting time, task handling time and so forth. (Syed et al., 2020) Improved operational efficiency together with all of its three cornerstones – cost-savings, reduction of time and manual work – are generally recognized benefits of RPA in the field of research and named one of the main reasons why organizations should consider RPA adoption and also why business managers see it as a very lucrative way of improving key performance indicators (Fung, 2014; Gotthardt et al., 2020; Hofmann et al., 2020; Januszewski et al., 2021; Leshob et al., 2018; Syed et al., 2020). The reduced manual workload is also considered to have positive impacts on the personnel as they are freed from repetitive and tedious tasks to more complex and value-adding activities (Hofmann et al., 2020; Leshob et al., 2018; Syed et al., 2020) which is believed to improve employee morale (Madakam et al., 2019). Capable human resources allocated to more engaging and interesting work contributes also to improving efficiency (Madakam et al., 2019; Syed et al., 2020).

Replacing humans with robots helps organizations improve accuracy and quality (Driscoll, 2018; Rutschi & Dibbern, 2020). As presented in Figure 4, “swivel-chair” tasks including accessing multiple systems and transferring data from one system to another make good candidates for RPA and these kinds of tasks are also prone to errors (Fung, 2014). According to Das and Dey (2019), RPA can eliminate human errors when the process and implementation are done properly and also Syed et al. (2020) claim that with RPA deployment the number of human errors decreases and automated tasks can achieve 100 % accuracy. Also, Fung (2014) and Madakam et al. (2019) recognize that better accuracy and fewer errors can be achieved with RPA deployment but they refrain to give any precise numbers of improvement. Robots can achieve better accuracy while working at a much higher speed than humans and don’t get tired like humans, meaning that robots are simply able to outperform humans in certain types of tasks (Costa et al., 2022; Rutschi & Dibbern, 2020). An advantage compared to the human resource is also the fast scalability of capacity based on the need, so the workload of robots can be easily up- or downscaled based on business demand (Das & Dey, 2019; Fersht & Slaby, 2012; Hofmann et al., 2020; Syed et al., 2020).

One more benefit of RPA is the ease of configuring the automation which doesn't require programming knowledge (Lacity & Willcocks, 2016a; Madakam et al., 2019) but the RPA vendors provide an intuitive user interface where the RPAs are built by arranging a sequence of modules and control flow operators to match the business process rules and logic (Hofmann et al., 2020). This allows the responsible business process people to design the automation themselves. The automated processes are also not limited to one business but the created execution logic can be re-used in another process (Hofmann et al., 2020). According to Lacity and Willcocks (2016b), this non-IT staff can be trained to design automation within just a few weeks which fosters faster implementation (Osman, 2019). The control over the process remains also within the business function or unit and reduces the dependence on central IT services (Fersht & Slaby, 2012). The overall control over the business process also improves when transferred from humans to robots (Syed et al., 2020).

Several sources also raise the improved data quality in terms of accuracy, consistency and compliance and data security as one RPA benefit (Fung, 2014; Januszewski et al., 2021; Leshob et al., 2018; Siderska, 2021). To get a comprehensive understanding of the positive impacts of RPA, the above-listed benefits and respective sources are gathered in below Table 2.

Table 2 Benefits of RPA.

BENEFITS	SOURCES
Lightweight IT implementation	Asatiani & Penttinen, 2016; Fung, 2014; Lacity & Willcocks, 2016b;
Cost-effectiveness	Asatiani & Penttinen, 2016; Das & Dey, 2019; Hoffman et al., 2020; Januszewski et al., 2021; Lacity & Willcocks, 2016b; Rutschi & Dibbern, 2020
Alternative to traditional outsourcing	Asatiani & Penttinen, 2016; Lacity & Willcocks 2016a; Syed et al., 2020
Improved efficiency	Cooper et al. 2019; Fung, 2014; Gotthardt et al., 2020; Hofmann et al., 2020; Januszewski et al., 2021; Leshob et al., 2018; Siderska, 2021; Syed et al., 2020
24/7 availability	Costa et al., 2022; Fersht & Slaby, 2012; Syed et al., 2020
Improved employee morale	Madakam et al., 2019; Siderska, 2021; Syed et al., 2020
Low error rate	Cooper et al. 2019; Fung, 2014; Das & Dey, 2019; Fernandez & Aman, 2021; Madakam et al., 2019; Siderska, 2021; Syed et al., 2020

Scalability	Das & Dey, 2019; Fersht & Slaby, 2012; Hofmann et al., 2020; Siderska, 2021; Syed et al., 2020
Easy to configure	Lacity & Willcocks, 2016b; Hoffman et al., 2020; Siderska, 2021
Improved control over business process	Fersht & Slaby, 2012; Syed et al., 2020
Higher quality and security of data	Januszewski et al., 2021; Leshob et al., 2018; Siderska, 2021

A coin has two sides and RPA also has its risks and challenges in addition to the benefits listed in Table 2. One central challenge is that RPA currently is only suitable for certain types of tasks and processes (Asatiani & Penttinen, 2016; Fernandez & Aman, 2021). Identifying appropriate processes suitable for RPA requires skills and a correct approach, which is not always so straightforward (Fernandez & Aman, 2021; Siderska, 2020). Keeping in mind the elements of a suitable task for RPA and avoiding choosing complex and subjective processes for automation, at least at the beginning of the organization's RPA journey, it's possible to mitigate the risk (Fernandez & Aman, 2021; Rutaganda et al., 2017). Being a recent technology, RPA lacks a proven track record compared to traditional outsourcing (Asatiani & Penttinen, 2016), for instance, which makes it hard for organizations to choose the best approach to evaluate the tasks in their situation (Costa et al., 2022).

Interestingly, Fernandez and Aman (2021) name data security and privacy as the main issue of RPA while some research stated that RPA implementation improves data security and privacy (e.g., Leshob et al., 2018; Siderska, 2020). Fung (2014) claims that RPA lowers the risk of unauthorized data access and thus improves data security and governance. Higher compliance to data regulatory requirements can be achieved through process transparency and traceability and reduced error-level. (Fung, 2014) Also Moffitt et al. (2018) see that RPA can improve security as human interaction with sensitive systems is decreased and processes are better monitored. On the other hand, robots handling data constitute risks especially regarding hacker attacks according to Flechsig et al. (2022). The robots will log into systems using company credentials and thus have access to passwords which has a potential risk for unauthorized access if not properly secured. Also, if mistakes are made during the configuration of robots it can cause serious errors throughout the systems it has access to and a malicious robot may execute tasks harming the organization. (Fernandez & Aman, 2021) Companies that wish to automate processes handling confidential client data (e.g., in the accounting industry) might face customer reluctance to use RPA software because they have concerns about data security (Cooper et al., 2019). However, these risks do not only concern RPA but any IT system and countermeasures to mitigate the above-mentioned risks are readily available and continuously developed (Gotthardt et al., 2020).

The type of data poses an issue for non-AI enriched RPA, as it requires data to be of a structured type and stored digitally (Costa et al., 2022). RPA cannot process unstructured data, such as scanned documents, which make up to 90% of all data. As a consequence companies have to feed RPA with process data in a correct form which maintains low-value tasks for employees. (Gotthardt et al., 2020) Cognitive automation tools are capable of handling and processing unstructured data but in this study's context the technological constraints of RPA have to be followed and tasks including the processing of unstructured data are not suitable to be automated with RPA as such. (Gotthardt et al., 2020; Hegde et al., 2017)

Asatiani and Penttinen (2016) and Fernandez and Aman (2021) see that RPA's impact on the jobs and current employees is a challenge. As with any new technology, people might feel threatened by RPA (Lacity & Willcocks, 2016b) and see robots as direct competitors for a job (Asatiani & Penttinen, 2016) or that their positions are weakened by robots (Gotthardt et al., 2020). If not transparently communicated and properly handled, this might have damaging impacts on employee morale (Asatiani & Penttinen, 2016). Siderska (2021) claims that there is no reason to fear that robots would make people obsolete, but it will surely impact jobs and require organizations to rethink employee roles. Strategic initiatives for RPA deployment should consider engaging employees with the technology which is essential for RPA success (Amaka & Nnenna, 2021). Table 3 gathers RPA challenges recognized in current research.

Table 3 Challenges of RPA.

CHALLENGES	SOURCES
Limited task suitability	Asatiani & Penttinen, 2016; Fernandez & Aman, 2021; Rutaganda et al., 2017; Siderska, 2020
Lack of proven track record	Asatiani & Penttinen, 2016; Costa et al., 2022
Compromised data security and privacy	Cooper et al., 2019; Flechsig et al., (2022); Fernandez & Aman, 2018; Gotthardt et al. 2020
Incompatible data	Costa et al., 2022; Gotthardt et al., 2020; Hegde et al., 2017
Impact on current employees	Asatiani & Penttinen, 2016; Fernandez & Aman, 2018; Lacity & Willcocks 2016b

Despite the challenges listed above, research has proven successful RPA implementations and positive post-implementation feedback (Asatiani & Penttinen, 2016; Willcocks et al., 2017). According to Amaka and Nnenna (2021) and Siderska (2021), the overall impact of RPA is considered positive as its strengths outweigh its weaknesses and thus the technology is regarded more as an opportunity than a threat. The realization of both benefits and possible challenges comes down to the success of RPA implementation (Costa et al., 2022). There is no universal concept or framework for RPA adoption but a stream of research around this topic has recently emerged (e.g., Costa et al., 2022; Gotthardt et al., 2020; Januszewski et al., 2021; Rutschi & Dibbern, 2020). The findings from previous literature about RPA implementation will be discussed in the next chapter.

2.1.3 Implementation of Robotic Process Automation

RPA technology has clear limitations regarding the processes it can automate and thus task evaluation is a vital step in the RPA implementation project. For instance, Hegde et al. (2017) state that using predefined criteria in the selection of the processes for automation is a prerequisite for successful RPA implementation. The lack of comprehensive guidelines for the identification of potential processes might lead to the automation of false tasks which can have costly consequences and lead to the abandonment of RPA (Hallikainen et al., 2018). According to Eulerich et al. (2022), the lack of guidance and clear frameworks for implementation are reasons for the slow adoption of RPA in many organizations and reasons why RPA adoptions fail. Even though a universal RPA implementation framework doesn't yet exist, several researchers have studied the criteria based on which the suitability of the tasks for robotic automation could be assessed. A synthesis of the criteria is gathered in Table 4 below.

Table 4 Criteria for RPA suitable tasks.

CRITERIA	SOURCE
Technical	
Entirely rules-based	Cooper et al., 2019; Eulerich et al., 2022; Kokina & Blanchette, 2019; Martinez et al., 2022; Willcocks et al., 2017
Limited human intervention	Asatiani & Penttinen, 2016; Fung, 2014
Structured, digital inputs	Cooper et al., 2019; Kokina & Blanchette, 2019; Martinez et al., 2022
Low cognitive requirements	Asatiani & Penttinen, 2016; Kokina & Blanchette, 2019
Located in a stable environment	Asatiani & Penttinen, 2016; Eulerich et al., 2022; Fersht & Slaby, 2012; Fung, 2014;
Limited need for exception handling	Asatiani & Penttinen, 2016; Fung, 2014; Martinez et al., 2022
Non-technical	

A clear understanding of the current manual costs	Asatiani & Penttinen, 2016; Eulerich et al., 2022; Fersht & Slaby, 2012; Fung, 2014
Easily transformed into unambiguous rules	Asatiani & Penttinen, 2016; Fersht & Slaby, 2012; Fung, 2014
Labour intensive	Fung, 2014; Kokina & Blanchette, 2019
Repetitive	Eulerich et al., 2022; Kokina & Blanchette, 2019; Martinez et al., 2022
High-volume of transactions	Asatiani & Penttinen, 2016; Cooper et al., 2019; Eulerich et al., 2022; Fersht & Slaby, 2012; Fung, 2014; Kokina & Blanchette, 2019; Willcocks et al., 2017
Maturity of the process	Hegde et al., 2018; Martinez et al., 2022; Willcocks et al., 2017
Multiple systems accessed frequently	Asatiani & Penttinen, 2016; Fersht & Slaby, 2012; Fung, 2014; Kokina & Blanchette, 2019
Prone to errors and re-works	Fung, 2014; Flechsig et al., 2022

The criteria in Table 4 are divided into two categories, technical and non-technical. Technical criteria evaluate whether the task is feasible to be automated with current RPA technology (Beetz & Riedl, 2019). Non-technology criteria focus on other than technological task properties. A task must not comply with all of the criteria to be suitable for RPA but these are good indicators of RPA suitability (Fersht & Slaby, 2012). However, according to Martinez et al. (2022), there are a few **fundamental conditions** that a task must fulfil, including being rules-based, receiving all inputs in a structured and standardized digital format and having a high maturity rate with a low exception rate. If a task does not fulfil any of the above-mentioned criteria it is not the best option for automation but other process improvements are recommended. (Martinez et al., 2022) Table 4 shows that also other authors have mentioned these conditions and given that RPA as a technology has its limitations there are no strong arguments against this criterion being a good baseline for task selection.

Another criterion standing out from the literature in a non-technological category is the high volume of transactions which is a bit two-fold criteria: high-volume transactions tend to be routine and repetitive making an ideal case for automation and providing the most opportunity for cost reduction (Fung, 2014; Lacity & Willcocks, 2016b) but sometimes processes with high value and low-volume transactions might also make good candidates for automation (Fersht & Slaby, 2012; Fung, 2014). An example would be to automate an outside working hours customer transaction handling process to meet a service level agreement of 24 hours instead of paying human employees to be on call (Fersht & Slaby, 2012).

Regardless of the criteria category, a good general guideline for selecting a task is to start simple, either aiming for quick-wins by automating business critical processes with high value or using less valuable tasks that are non-business critical as first test cases to gain experience and knowledge of the new technology (Flechsig et al., 2022; Fung, 2014). Either way, the first projects must show a noticeable impact and realize the expected benefits to convince decision-makers of the technology’s possibilities and thus create momentum for automation (Flechsig et al., 2022). Few authors suggest that RPA implementation should start by creating a business case to justify the automation need and feasibility (Carden et al., 2019; Flechsig et al., 2022; Fung, 2014; Santos et al., 2019). A business case enables managers and other decision-makers to compare the current costs of a task or service and the costs of RPA conducted task and other value that RPA brings in. This is easier if the current manual costs of a process are well known which is also one of the criteria in Table 4. (Fung, 2014)

Understanding the manual costs enables one to estimate the delta between manual and automated work costs and thus calculate Return on Investment (ROI) for RPA (Asatiani & Penttinen, 2016); RPA is seen as a quick way to achieve high ROI (Lacity & Willcocks, 2016a; Santos et al., 2019). Embedding comparison of valid KPIs to the business case helps to avoid a costly deployment of RPA (Fung, 2014) and also might help to convince the decision-makers about RPA benefits as most organizations are interested to seize the possibilities to cut costs and easily link the stiff legacy systems together (van der Aalst et al., 2018). Management could also be interested in how many FTEs could be saved with RPA – in a case study made by Lacity & Willcocks (2016b) the case company only considered automating processes that could save at least three FTEs. Without a business case, it is difficult to convince key stakeholders to support the adoption project as one cannot then determine if robotic automation has cost advantages compared to human labour (Fung, 2014).

To obtain more precise costs of whole RPA implementation and maintenance a Proof of Concept (POC) should be conducted to evaluate the technical feasibility and financial value of RPA (Lacity & Willcocks, 2016b). It includes reviewing the current state of the process and target future state and composing a deployment plan, for instance (Carden et al., 2019). POC can also be a “pilot” deployment of RPA in a non-business critical task to observe the deployment process and gain evidence of RPA feasibility (Flechsig et al., 2022). POC is a great tool to complement a business case as it gives realistic data about the costs of RPA deployment (Fung, 2014).

The evaluation of suitable tasks and formulating business cases around the potential processes is an important part of the overall RPA implementation and most of the studies presenting an RPA implementation plan emphasize the evaluation of the tasks. For instance, Asatiani and Penttinen (2016) and Carden et al. (2019) present a four-stage process for RPA implementation in which the first three stages are only about task evaluation and selection: analysis workshop, process assessment and business case proposal. The last stage then covers the whole implementation itself. (Asatiani & Penttinen, 2016; Carden et al., 2019). Beetz & Riedl (2019) have focused only on the evaluation of automatable tasks and present an RPA process evaluation model including three stages: pre-selection, suitability prioritization and financial analysis. Despite different labelling, the stages consist largely of the same tasks but also have some differences. The four-stage model used by Asatiani and Penttinen (2016) and Carden et al. (2019) starts by generally understanding RPA possibilities and reviewing processes currently executed by the company and assessing their suitability for RPA based on an evaluation criterion and in the second stage the selected processes are already transformed into rule-based, concrete steps. In the third stage business cases are formed based on the gathered info (Asatiani & Penttinen, 2016; Carden et al., 2019). Beetz & Riedl (2019) make a preselection of suitable processes in the first stage and in the second stage, they focus on making an automation priority order for the selected task based on a prioritization criterion. The third stage of their processes focuses also on forming a business case similar to Asatiani and Pentinen (2016) and Carden et al. (2019).

Prioritization of the tasks to be automated is an interesting topic as it is covered quite vaguely in the literature despite the importance of selecting the right tasks for RPA being highlighted. Many studies (e.g., Carden et al., 2019; Flechsig et al., 2022; Syed et al., 2020) state that the initial RPA adoption should start with low-complex and low-risk tasks to minimize the risk of adoption failure. Flechsig et al. (2022) suggest that tasks requiring human judgement and of low value and feasibility should be deprioritized until either the RPA technology has advanced, or the suitability of the process increased. All in all, these guidelines are very general, whereas Beetz & Riedl (2019) have composed three-category prioritization criteria where each criterion is weighed based on importance. The categories have the following labels: technical feasibility, business potential and organizational aspects. The criteria include the same criterion as Table 4 to a great extent, but weighing the criterion based on their importance gives some clarity to the decision, of which tasks to automate first. Similarly, some authors have determined baseline criteria (Martinez et al., 2022) that a task must fulfil to be automated which can also help to evaluate the prioritization order of the tasks. However, there is no unambiguous way to assess the priority order that would have been widely adopted in the literature.

Selecting the right tasks for automation is of great importance for the success of RPA deployment. Flechsig et al. (2022) have used a three-staged implementation framework also in their study which covers the pre-implementation, implementation, and post-implementation phases. The pre-implementation phase includes all the above-mentioned tasks related to task selection but also highlights the importance of aligning RPA deployment with overall organizational strategy and ensuring top management support from the early phases. Also, it includes selecting the RPA vendor and RPA business model. (Flechsig et al., 2022) Organizations have several alternatives for sourcing RPA (Flechsig et al., 2022; Lacity & Willcocks, 2016b). One option is to *insource*, so buying a licence directly from a software provider and developing RPA inside the organization or *insource and consulting* where the licence is still bought from a software provider, but the development of services is left for a consulting company. Another option is to *outsource* the RPA development typically for the RPA provider. (Lacity & Willcocks, 2016b)

After all the preparations are ready the implementation process continues to the second stage. In this implementation stage organizations usually establish a Centre of Excellence team, project team or another governance mechanism to supervise the implementation. This team should consist of experts from various domains. (Flechsig et al., 2022) The team is responsible for managing RPA governance and the process of robot development, testing and launching and also for change management and general IT integration (Carden et al., 2019; Flechsig et al., 2022). Both Flechsig et al. (2022) and Lacity & Willcocks (2016b) consider the early involvement of the IT department a critical success factor for RPA introduction as it can enhance the prioritization of the project and also helps to align RPA with general IT governance. In the best case, RPA introduction can be synergized with other IT projects (Flechsig et al., 2022). From a change management point of view, open communication of intended effects on jobs is important from the beginning to prevent affected employees from feeling threatened and trying to sabotage the RPA implementation (Lacity & Willcocks, 2016b).

As already stated, RPAs can be developed without extensive programming skills and non-IT experienced staff can be trained quickly to use RPA. Depending on the process the automation might need complex and customised coding and then it is beneficial that the business process personnel and programming experts develop the automation designs together (Cooper et al., 2019). The involvement of software programmers could help to ensure the user-friendly design of robots as the ease of communication between personnel and robots is seen as key to increasing RPA user acceptance (Wewerka et al., 2020). Figure 5 below draws a process flow for RPA implementation combining the stages and things to be considered identified in the literature.

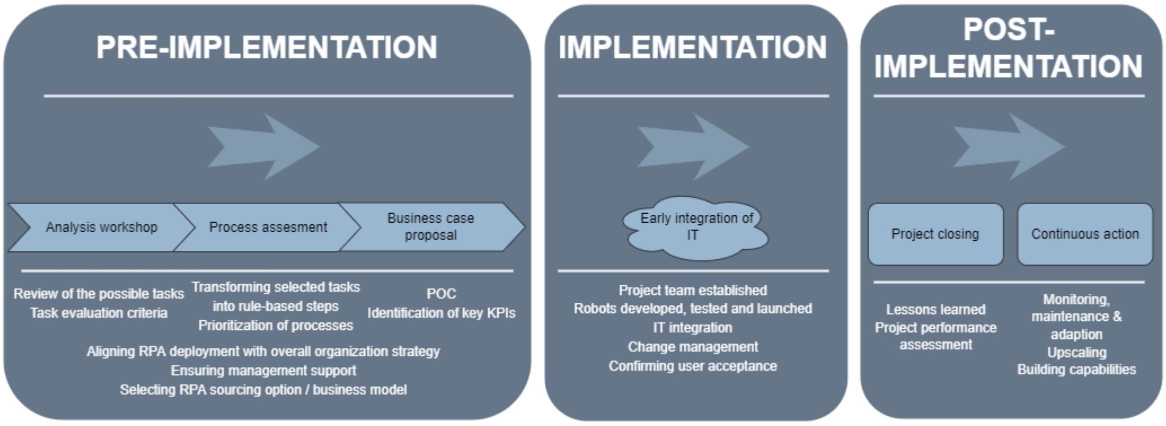


Figure 5 RPA implementation process (adapted from Beetz & Riedl, 2019; Carden et al., 2019; Flechsig et al., 2022; Lacity & Willcocks, 2016b; Wewerka et al., 2020).

Figure 5 shows the last stage of the implementation process from Flechsig et al. (2022), post-implementation. Two steps taking place within this phase could be identified from the literature. Carden et al. (2019) state that the implementation project should have an official closing and wrap-up to reflect the challenges and successes in the project and have them documented as “lessons learned”. Flechsig et al. (2022) focused more on activities that should take place on a continuous basis after the implementation project, such as maintenance and monitoring and incrementally upscaling the use of RPA.

The above-presented implementation draft is quite superficial and does not take stance on any industry-specific specialities that should be considered. However, there are differences in the implementation process depending on the industry and function where RPA is introduced. For instance, Eulerich et al. (2022) studied RPA implementation in audit tasks and presented an audit-specific criterion that a task should meet to be automated in an audit context. Most of the case studies describing the implementation projects more in detail focus on certain business functions such as finance (Asatiani & Penttinen, 2016; Kokina & Blanchette, 2019), auditing (Eulerich et al., 2022; Moffitt et al., 2018) and customer service (Lacity & Willcocks, 2016b). Very recently studies from other business functions, such as supply chain management and purchasing (Flechsig et al., 2022) have been published. RPA implementation in sales, which is the context of this study, has not been examined in any scientific publication according to the author’s knowledge and probably the adoption of RPA in sales lags behind other business functions, such as the above-mentioned audit and finance. This study thus aims to shed a light on the sales-specific factors that should be considered in the RPA implementation.

2.2 Sales processes

Understanding the sales process as a whole and the individual processes and tasks taking place within sales is important to evaluate RPA's potential in sales. Moncrief and Marshall (2005) present "the oldest paradigm" of sales, which constitutes of seven steps: prospecting, pre-approach, approach, presentation, overcoming objections, closing and follow-up. The authors say that the model has changed very little over the years, but the orientation has altered to more customer-oriented (Moncrief & Marshall, 2005). Sales processes vary depending on the industry and even between companies within the same industry, but the principles are the same. Rodríguez et al. (2020) identified that different markets have commonalities in sales processes. In business-to-business (B2B) markets sales processes call for strong efforts by the seller in reaching out, closing deals and maintaining relationships with customers compared to another traditional market, business-to-customer (B2C). The B2B sales process is also more detailed in stages and retaining customers is a key to generating higher sales and thus long-term customer relationships are necessary. (Rodríguez et al., 2020).

This study focuses on the B2B sales process as it is the market of the case company. The case company can be categorized as a technology and manufacturing company, so the next chapter takes a closer look at the features of the industrial sales process. RPA implementation in a sales support team is of special interest in this study and thus a deeper dive into the tasks and processes in sales engineering and sales support are taken. Also, the impact of digitalization on sales processes is studied as the B2B sales processes are now undergoing the digitalization process which has been commonplace in the sales of non-complex consumer goods markets (Mahlamäki et al., 2016; Rodríguez et al., 2020). The digitalization of sales processes might create further possibilities for RPA adoption and thus understanding the impact of digitalization in sales is essential for the target of this study.

2.2.1 Industrial sales process

An explicit way to describe sales is to define it as an action, where value is created through an interaction between individuals who either represent themselves or an organisation. As a result customer's problem is solved, the monetary exchange takes place and thus value is created for all parties involved. (Hänti et al., 2016, p. 10) Around this core, the implementation of sales might differ not only between industries but within companies of the same kind. This study is conducted in a manufacturing company operating in a B2B environment and thus the sales processes of an industrial kind are researched. The case company can be categorized as a make-to-order (MTO) company. MTO refers to the manufacturing implementation where the products are produced partly or entirely only after the customer order has been received; the opposite approach is make-to-stock where the production and customer orders are not connected but the products are complete when the customer places an order (Kingsman et al., 1996). Sales and production are strongly connected in MTO companies; production is demand-driven and allows product customization. The products are configurable according to customers' requests but yet designed to be manufactured in an efficient way that keeps the cost at the level of mass-produced products (Custódio et al., 2018).

Dealing with customer inquiries is an essential issue for MTO companies (Kingsman et al., 1996), but before that the customer's inquiry or request for quotation (RFQ) needs to be initiated and that is the responsibility of sales. In a "traditional" sales process the salesperson spends time learning the customer's processes and then makes a lucrative offer to the customer to attract the customer's interest in the company's offering (Kotler et al., 2010, p. 761). Figure 6 below presents three traditional B2B sales processes recognized in the literature: a six-step process from the 1920s in How to Increase Your Sales (1920, 17th ed. as cited in Moncrief & Marshall, 2005), the seven-step process by Moncrief & Marshall (2005) and the six-step process by Kotler et al. (2010, pp. 761-762). The content of each process is largely the same, only labelling differs.

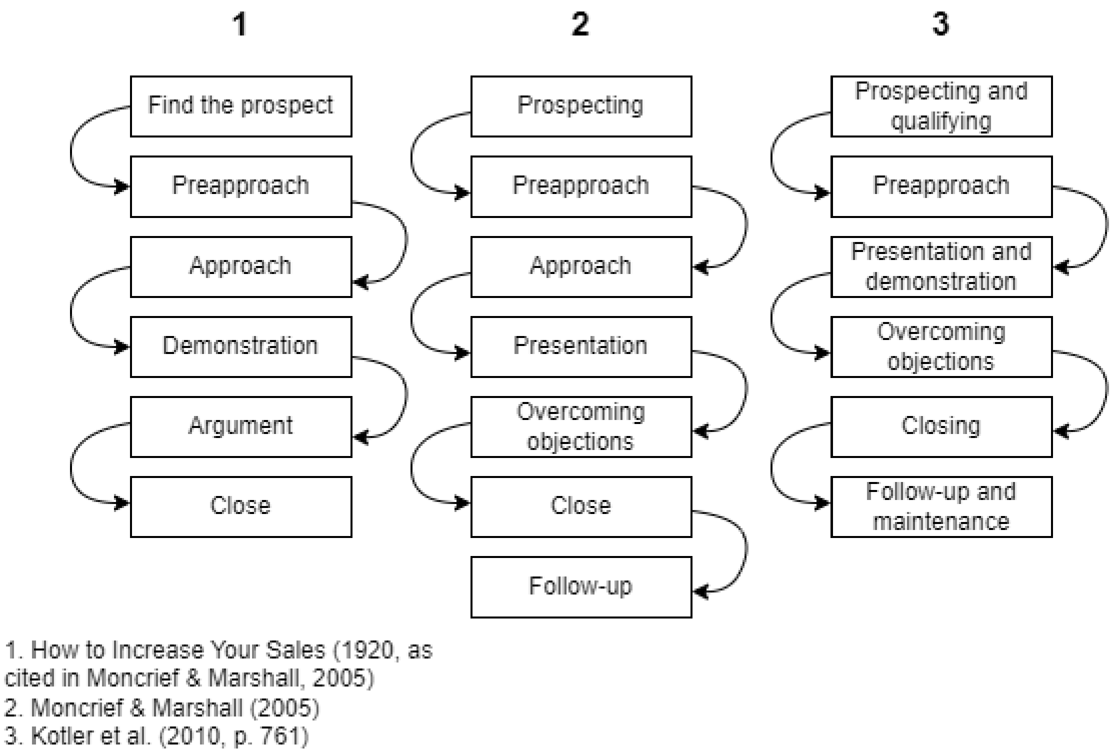


Figure 6 Traditional sales processes presented in the academic publications.

Figure 6 shows that the steps of the B2B sales process have remained almost unchanged over a century, the only remarkable change being the addition of the last step, “follow-up” (Moncrief & Marshall, 2005). According to Kotler et al. (2010, pp. 762), this step is vital to ensure customer satisfaction and loyalty in terms of repeat business. The approach to sales has shifted from forceful, closed means to a relationship-selling approach (Moncrief & Marshall, 2005) where long-term buyer-seller relationships lead to higher sales through rebuys and follow-up orders (Rodríguez et al., 2020). Especially in an industrial context the relationships between buying and selling companies are important, however, the nature of the relationship depends on the strategic importance of the product and process of the two companies; the importance and closeness of the relationship are different with office supplies provider and the supplier of a product which is essential to buyer’s offering. (Ford, 1980)

The original advantages of relational selling were cost-benefit consequences for both parties (Hohenschwert & Geiger, 2015) and for the selling company to ensure market position as the close, long-term relationships would pose a barrier for new players to enter the market (Ford, 1980). However, the perception of relational value has recently changed towards cross-organizational problem-solving, where monetary value for customers is created through gains in efficiency and improved processes, for instance (Hohenschwert & Geiger, 2015). The value is co-created with customers (Viio & Grönroos, 2014). Salespersons have a key role in value creation in B2B relationships as they have an excellent position to understand customers’ value drivers and try to influence customers’ value perceptions in favour of the selling company (Hohenschwert & Geiger, 2015).

The creation of exceptional customer value is a necessity for companies’ long-term survival and growth (Terho et al., 2012). Customer value creation is so important that new sales approaches have emerged around it: solution, consultative and value-based selling (Hohenschwert & Geiger, 2015). Also, the case company is in the process of transitioning to more value-driven sales by developing its solution offering and sales. This is a wider trend in the B2B markets, where even more often the value is created through solutions selling – meaning that products and services are sold as a complete package rather than separately (Brady et al., 2005). Solution-based selling enables companies to go “downstream” in the value chain (Salonen et al., 2021) which offers an initiative for business-to-business companies to maintain a close buyer-seller relationship (Momeni & Martinsuo, 2019; Wise & Baumgartner, 1999 as cited in Salonen et al., 2021). The sales team is a key enabler of this transition as it is up to them to craft a solution offering and communicate its value to the customer (Salonen et al., 2021). With the transition towards solution selling the position of sales changes from being an independent and somewhat isolated function to becoming an integrated, cross-functional part of customer management (Storbacka et al., 2011).

The process of selling a solution is different to selling a product (Brady et al., 2005; Salonen et al., 2021). First, selling solutions is a cyclical process where the post-project services act as an igniter to a new sales project. In traditional product sales, the handover of the product marks the end of the project, but in solution sales, the responsibility of maintenance, support and other lifecycle services remains with the seller (Brady et al., 2005). Second, the stages of solution selling are different from those of product selling. Solution selling comprises four relational stages (Salonen et al., 2021):

(1) definition of customer requirements,

(2) integration and customization of goods and/or services,

(3) project execution and

(4) post-project support.

From salespeople point of view this means having to understand customers' businesses better and making more customized solutions for customers' needs (Salonen et al., 2021). Ulaga & Loveland (2014) claim that selling solutions requires different skills and attitudes than selling goods – solution sellers benefit from general intelligence and learning orientation. On the other hand, Storbacka et al. (2011) argue that instead of the skills of an individual salesperson the unit of analysis should be shifted to the capabilities of the sales unit as sales is becoming an important part of driving strategic initiatives. Figure 7 shows the main stages of the solution sales process.

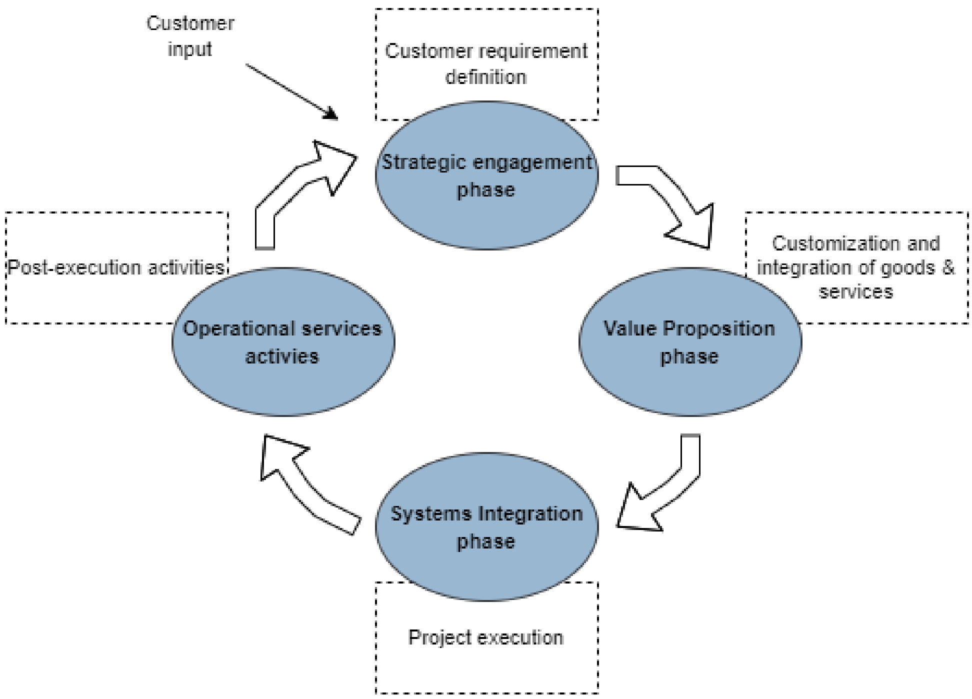


Figure 7 Sales process of selling solutions (adapted from Brady et al., 2005; Salonen et al., 2021).

The process described above in Figure 7 is superficial and does not reveal the micro activities happening throughout the sales process, such as customer touchpoints, capabilities needed and so forth. Rabetino et al. (2018) have recognized that existing research tends to simplify the sales process and not go into the individual tasks and interfaces within the process. They've formed a five-step framework for selling solutions in an industrial context which is a consensus of the traditional 7-step sales paradigm (Moncrief & Marshall, 2005) and the solution selling frameworks (Brady et al., 2005; Salonen et al., 2021; Storbacka, 2011). The steps are (Rabetino et al., 2018)

1) Information acquisition
2) Initial negotiation
3) Value proposition and real negotiation
4) Offering deployment and value authentication
5) Customer operations maintenance and support

The most important purpose of the information acquisition -step is to find customers whose needs match the seller's resources (Storbacka, 2011). This is done, for instance, by regular visits to customers by a dedicated salesperson (Rabetino et al., 2018) who engages the customer in a discussion of their business problems before any official invitation to tender has been issued (Brady et al., 2005). This ensures the right contacts in the customer company and acts as an ignitor for preliminary negotiation in step 2 (Moncrief & Marshall, 2005). The aim is to make the customer interested in the seller's offering (Töytäri et al., 2011). In value-based selling the value is determined iteratively together with the customer preferably in a cross-organizational team and this is what happens in step 3 (Storbacka et al., 2013; Töytäri et al., 2011). In the actual negotiation the quantified value should be turned into an offering which meets or even exceeds the customer's expectations (Brady et al., 2005; Töytäri et al., 2011). Steps 4 and 5 take place in parallel and are initiated when the customer and seller have reached a mutual contractual agreement (Brady et al., 2005; Rabetino et al., 2018). The solutions are usually difficult to price as the lifetime costs of the solution must be considered and a common understanding of how value will be measured in terms of pricing needs to be formed together with the customer. In addition, differing from traditional product offerings project managers in steps 4 and 5 have to pay attention to customer satisfaction besides the usual constraints of budget and schedule. (Brady et al., 2005)

The case company is heading more and more towards solution offering and value-based selling and the sales process resembles the above-mentioned industrial B2B solution sales process very much, even though the offering of the case company still relies heavily on the product. This can be explained by the nature of MTO products, which require more interaction between customers and sales than make-to-stock products which are sold from an inventory and customers cannot affect the product design (Parente et al., 2002). So, selling MTO products includes cooperative problem-solving and value-creation between seller and buyer by default. It is noteworthy that the sales scene of the case company is determined by competitive bidding: when a customer decides to enquire about a product, the inquiry is usually sent to all suppliers simultaneously and the competing quotes will be evaluated before selecting the company with which the order will be placed (Kingsman et al., 1996). This means that even though the seller has been negotiating closely with the customer over several months the customer might end up choosing another supplier and the seller is left with empty hands; Tobin et al. (1988) argue that the percentage of quotes becoming firm orders varies from 3 % to virtually 100 %.

Another determining factor of the sales process of MTO products is the cooperation of production and sales units. Production is driven by demand and on the other hand production capacity sets limits to selling products (Feng et al., 2008; Tobin et al., 1988). Production and sales are traditionally two non-coordinated business units whose decisions have a significant impact on the company's financial performance and operational efficiency (Feng et al., 2008). Ideally, the process of bidding or quoting for orders (which is part of sales) should be used to some level to design the order book so that it can be produced profitably (Tobin et al., 1988). Sales and Operations Planning (S&OP) is a tool used to bring the two departments together strategically (Feng et al., 2008), but on a daily basis, this means that the salesperson and product manager are in close contact during the bidding process. This is illustrated in Figure 8 below, which draws a consensus on the sales processes presented in this chapter.

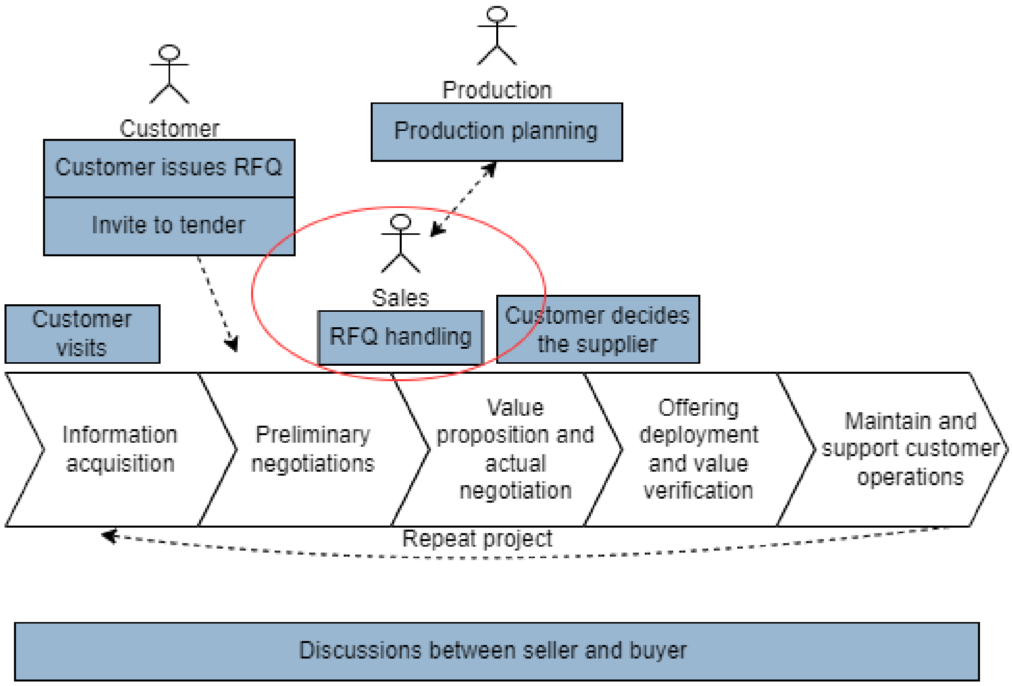


Figure 8 Solution selling process (adapted from Feng et al., 2008; Kingsman et al., 1996; Rabetino et al., 2018).

The bidding process and aligning sales and production are key determinants of the sales process in the case company. The quotation process marked with a red circle in Figure 8 is of special interest in this study as it is the responsibility of the study's target group, Sales Support Engineers. The next chapter takes a closer look at their responsibility area, in other words how customer inquiries are dealt with and how the quotation is formed in an MTO environment.

2.2.2 Sales Engineering process

There is not much literature available about Sales Engineering: Reunanen et al. (2018) have identified that there is not even an explicit definition of the profession of a Sales Engineer among the existing publications. However, the literature found is enough to craft a sufficient understanding of the topic. Reunanen et al. (2018) define Sales Engineers, known as SE, as the profession of selling technical products and services to companies; they provide the technical knowledge needed to make sales (Greenwald & Milbery, 2001, as cited in J. M. Wilson & Hunt, 2011). Required skills are a combination of technical knowledge and commercial skills and they need to understand the requirements of the industry well (Reunanen et al., 2018). SEs cooperate cross-departments with production, engineering, and research and development to determine how the customers' needs could be fulfilled the best (J. M. Wilson & Hunt, 2011). As presented in Figure 8 above (red circle), the Sales Engineer process starts after the request for quotation has been received from the customer (Kingsman et al., 1996). Kingsman et al.

(1996) have crafted the customer inquiry handling process step by step, and it is presented in below Figure 9.

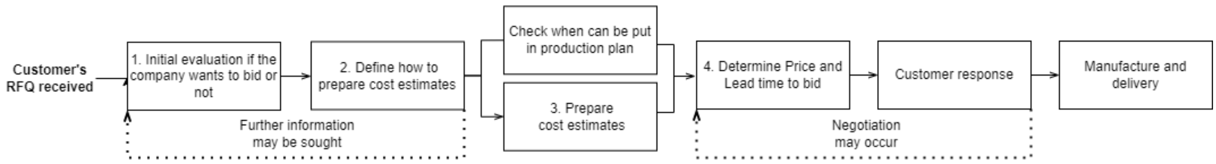


Figure 9 RFQ handling process (adapted from Kingsman et al., 1996).

Kingsman et al. (1996) describe the process on a general level but from an MTO company point of view. In Figure 9 the first step is self-explanatory, the seller decides whether it wants to make a bid for the tender or not, depending on if the company can offer what the customer requests. Sometimes the seller's (product) offering meets the customer's requirements, but commercial requirements, such as a definite delivery date or price range, cannot be met and therefore the bid is not made. The second and third steps are about estimating the costs based on the man-hours required in production and component costs and so forth. (Kingsman et al., 1996) At this point Kingsman's model differs from the process used in the case company.

In a market of customizable products companies have implemented product configuration systems (PCS) to enable mass customization (Kristjansdottir et al., 2018) which means that customized products and services can be provided at a cost similar to mass-produced products (Custódio et al., 2018). Traditionally, the product specification process involves a lot of people from multiple departments and therefore takes time (Hvam et al., 2008a; Kristjansdottir et al., 2018). PCS makes the RFQ handling faster: user, such as a Sales Engineer, gives the configurator some key parameters based on customer requirements and the configurator works out a product specification automatically using predefined rules, so the former input of different departments is now embedded in the PCS. The PCSs are often able to do product pricing as well and generate a commercial offer template when integrated with a document system. (Hvam et al., 2008a; Vanwelkenhuysen, 1998) Products configured with PCS are usually modular products and the customization is done with the PCS. It fits light MTO products and configure-to-order (CTO) products. The PCS is operated by a customer support unit, which in the study's context means Sales Engineering. PCS not only shortens response time to the customer but improves product specification quality (Kristjansdottir et al., 2018) and reduces the technical know-how required from SEs (Vanwelkenhuysen, 1998). The RFQ handling and product configuration process using a PCS is presented in Figure 10 below.

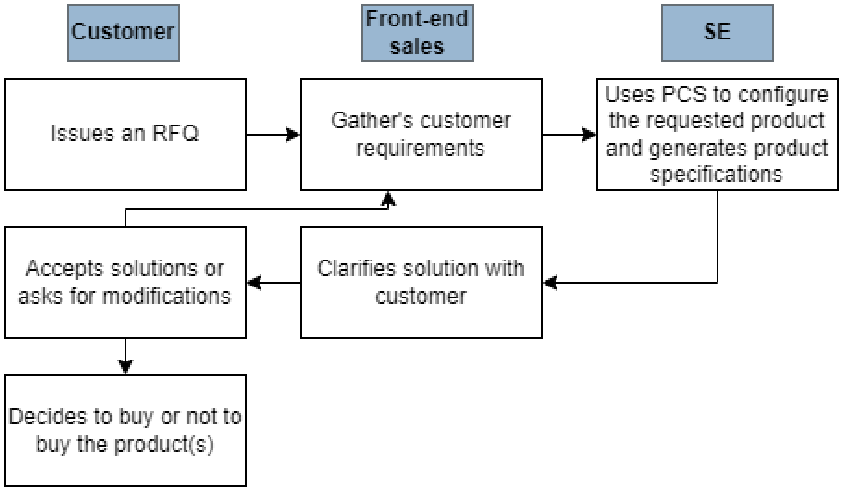


Figure 10 Product specification process with PCS (adapted from Kristjansdottir et al., 2018).

So, in a company where PCS is used, the product configuration would take place during steps 2 and 3 in the Kingsman et al. (1996) process presented in Figure 9. The process by Kristjansdottir et al. (2018) in Figure 10 does not include the alignment of sales and production which is important in MTO companies because the production capacity determines the lead times that can be offered (Feng et al., 2008). In Kingsman et al. (1996) model the production availability is checked in step three. Some PCS have lead times implemented in the configuration (Hvam et al., 2008b), but not in the case company. In the following step 4, the price and lead time are determined and communicated to the customer, and this is the corresponding step for Kristjansdottir et al. (2018) model's step in which sales clarifies the solution with the customer (Figure 9). In both models, customers might ask for alternations, change their requirements or just ask for a better price and the seller then modifies the offer and product specification if feasible (Kingsman et al., 1996; Kristjansdottir et al., 2018). Sometimes the customers end up rejecting the offer even after long negotiations and offer iterations or they reject already the first offer straight away (Kingsman et al., 1996).

Both the process models from Kristjansdottir et al. (2018) and Kingsman et al. (1996) describe the process of handling customer inquiries (RFQs). It is not explicitly determined as the work of a Sales Engineer in either of the publications. It is difficult to find studies describing SE jobs, probably because of the lack of a clear definition of SE as argued by Reunanen et al. (2018). Care and Bohlig (2014, pp. 2–3) claim that the role of SE is still evolving and there are multiple terms used for the position amongst SE, such as Sales Consultant. They describe SEs as "those who engage in the technology side of the sales equation" (Care & Bohlig, 2014, pp. 2–3). Care and Bohlig (2014, p. 33) consider the RFQ handling a part of the SE job but not the only responsibility – they perceive SEs as having a central role throughout the sales process (Care & Bohlig, 2014, p. 7). Vanwelkenhuysen (1998) is the only one clearly stating that the customer requirements are acquired and processed by SE. It can be concluded that RFQ handling is usually the responsibility of SEs, whether it's the primary job or just one of the responsibilities varies. In the case company, it is the primary job of SEs.

RFQ handling is not only about the configuration of the product and creating an offer. Care and Bohlig (2014, p. 33) do not explain the RFQ handling process so in detail as Kingsman et al. (1996) and Kristjansdottir et al. (2018) but they emphasize SEs' responsibility in deciding to bid or not. SEs are part of sales support or the so-called inbound sales structure, meaning that they support outside salespeople by providing them with resources, usually technical or product knowledge. Thus SEs do not necessarily participate in direct customer contact and they are not part of the structure that pursues to get an invitation to a customer's tender, but their primary responsibility is to handle RFQs. (Terho et al., 2022) Care and Bohlig (2014, p. 32) claim that companies shouldn't answer all the RFQs because the percentage of RFQs and following projects they end up winning is small. Companies – and SEs – should invest the efforts in activities that are likely to pay back. (Care & Bohlig, 2014, p. 32)

Wilson and Hunt (2011) claim that the utilization of SEs increases the performance of salespeople in companies. SEs afford salespersons to have more time to maintain customer relationships, for example. Pairing SE with a salesperson is the most efficient allocation of resources because SE complements the salesperson's capabilities. SEs' selling techniques are different from those used by the salesperson in most cases: their approach is consultative, focusing on the customer's problem and how it could be solved with the seller's product. Salespersons usually just describe the product and leave it to the customer to decide if it's useful. (J. M. Wilson & Hunt, 2011) For technical products' success marketing capability is critical (Dutta et al., 1999). Customers buy products to fulfil a need and therefore it is essential to understand customer circumstances to market the right benefits of products that appeal to the customer (Stoiljkovic, 2009). Therefore, to be effective SEs need product knowledge (J. M. Wilson & Hunt, 2011).

Stoiljkovic (2009) has listed tasks that are usually the responsibility of an SE. Some of the tasks are the same that Kingsman et al. (1996), Kristjansdottir et al. (2018), Vanwelkenhuysen (1998) and J. M. Wilson and Hunt (2011) have identified, but Stoiljkovic (2009) has looked into the task from a wider perspective than just RFQ handling. Noteworthy is that Stoiljkovic (2009) and J. M. Wilson and Hunt (2011) speak specifically about SEs while Kingsman et al. (1996), and Kristjansdottir et al. (2018) speak generally about salespeople or customer support units. Stoiljkovic (2009) has also listed qualities that make a good SE. Both responsibilities and qualities of SE are presented in below Table 5.

Table 5 SE responsibilities and qualities (adapted from Stoiljkovic, 2009 and 1) Kingsman et al., 1996; 2) Kristjansdottir et al. 2018; 3) Levine, 2007, p. 20; 4) Vanwelkenhuysen, 1998 and 5) J. M. Wilson and Hunt, 2011).

Sales Engineer's responsibilities
Gathering and interpreting customer requirements (1, 2, 4 & 5)
Persuading customers that the company's offering will best serve their needs
Providing price and delivery time information for all applicable RFQs (1,4)
Solving technical issues related to RFQs
Following up with customers and trying to further understand their demands (4, 5)
Coordinating actions with other employees to ensure seamless integration of engineering and sales processes
Collaborating firmly with the marketing department to plan and execute campaigns to promote the market and products (5)

Sales Engineer qualities
Technical expertise
Proficiency in various communication techniques
Listening skills
Negotiation capabilities
A mindset of welcoming change (3)
Understanding customer circumstances

The qualities of a good Sales Engineer have evolved over time. Levine (2007, p. 9) states that in the past SEs' main job was to deliver technical messages to a technical audience, but nowadays the qualities of SE are much more non-technical, like the ones listed in Table 5. Technical knowledge remains to be important, but the required capabilities have shifted to include a good sense of business and customer relations management (Levine, 2007, p. 10). Understanding customer circumstances combined with the ability to connect the product technology to relevant customer needs is crucial (Levine, 2007, p. 11). The B2B sales cycles tend to be lengthy, from months to years, so good communication and listening skills come in useful to maintain and build long-term relationships. Interaction skills are valuable also internally as SEs usually work together with other departments, such as engineering and production, to stay up to date with their knowledge. (Stoiljkovic, 2009) Sales Engineers' ability to change is a necessity for success according to Levine (2007, p. 19): the circumstances change anyway, and it is up to the SE if he or she welcomes it or just surrenders to it. SEs welcoming change see it as a possibility to evolve and they're eager to take new technologies into use in their daily work, for example. Surrendering SEs consider changes painful and they need to talk themselves into accepting the inevitable and overcome initial negative reactions. Most of the SEs belong to the surrendering ones. (Levine, 2007, p. 20)

Digital transformation is ongoing in most B2B companies (Überwimmer et al., 2021) and the importance of the ability to adapt to changes increases. SEs are prone to change in many ways – the products and services evolve (Levine, 2007, p. 15) and ways of working are changed by new technologies (Kristjansdottir et al., 2018). To welcome change and turn it into an advantage is key to the long-term success of SEs (Levine, 2007, p. 19). The following chapter discusses the changes digitalization has already brought to sales and what will change in the future.

2.2.3 Effects of digital transformation on sales

This chapter discusses both digital transformation and digitalization: digital transformation means the use of new digital technologies that enable extensive business improvements and influence customers' life thoroughly (Reis et al., 2018) and digitalization means altering analogue processes into digital processes (Überwimmer et al., 2021). According to Überwimmer et al. (2021), companies either proactively drive digitalization in their operations or are forced to digitalize by external pressure. Companies driving digitalization consider improvements in efficiency as one of the primary goals to be achieved with digitalization. (Überwimmer et al., 2021) Despite the efforts made to enhance digital transformation the gains in productivity and efficiency have hardly materialized (Wengler et al., 2021). On the other hand, some studies reveal that technologies and digital tools have improved B2B sales in terms of revenue, effectiveness, profitability and understanding of customer's needs as argued by Mattila et al. (2021). Nonetheless, companies are often forced to change by the market and their customers (Überwimmer et al., 2021) and by major disruptions brought about by advancements in digital technology, such as artificial intelligence and machine learning (Singh et al., 2019). Even though the current sales practices and theories are threatened new opportunities for sales practice and research are opening (Singh et al., 2019) and companies need to embrace this development to stay competitive (Überwimmer et al., 2021).

In sales, digital transformation can be defined as improving customer outcomes in existing business models and advancing competencies and rethinking the value proposition of the firm by applying digital technologies to current company resources. Digital transformation requires digitalization. (Singh et al., 2019) The applied digital technologies fall into three categories (Ahearne & Rapp, 2010): salesperson-oriented, customer-oriented or shared. Salesperson-oriented and customer-oriented technologies are used exclusively either by sales or customers and shared technologies are interactive, social media being an example of this. (Ahearne & Rapp, 2010) Überwimmer et al. (2021) see the shared technologies profoundly changing the way of contacting and communicating with customers: first contacts are preferred to be made in social media and meetings with customers are reduced, but simultaneously the speed of response is expected to increase. Singh et al. (2019) say that B2B companies are launching self-service platforms for customers to browse items and track or place orders; similarly, buyers are introducing online platforms for suppliers to participate in tender processes.

Sales channels are being rapidly digitized, again, to stay competitive and save on costs, improve selling efficiency and improve customer value (Thaichon et al., 2018). Überwimmer et al. (2021) consider the biggest changes brought about by digitalization in sales to be the new channels to communicate, the need for real-time data availability and the role of sales. Many studies proclaim the need for a multichannel approach to contacting customers (Ramos et al., 2023; Thaichon et al., 2018). According to Syam and Sharma (2018), the sales processes will be impacted by robotics, machine learning and artificial intelligence causing the automation of routine sales tasks. The automation is targeted to routine, non-productive processes and this will free up salesperson’s time for more productive, customer-facing tasks. (Syam & Sharma, 2018) Automation of sales is called sales force automation (SFA) which together with related digital sales tools is profoundly changing the work division and dynamics between the selling and buying companies (Mahlamäki et al., 2020).

Automated sales processes enable customers to find appropriate information about products and services fast and even perform simple transactions without the involvement of a salesperson (Thaichon et al., 2018). Also, more refined tools are available, such as sales configurators – digital tools designed to guide the user through a service or product configuration process (Rogoll & Piller, 2004, as cited in Mahlamäki et al., 2020). The configuration process produces a configuration which describes the make-up of an instance of a product customized to the customer’s requirements within the limits set by the product architecture (Tiihonen et al., 1996). The demand for customized products is increasing from the customer side (Hvam et al., 2008a) and configurable products are the answer to that, having a pre-designed basic structure that is adaptable to customer requirements (Tiihonen et al., 1996). At first, these kinds of configurators were made to assist sales representatives in their job, but recently the configurators have been made available for buyers’ independent use as well without the salesperson being present

(Mahlamäki et al., 2020). Configurator is just an individual example of SFAs - some professionals estimate that even over a third of the sales processes could be automated (Mattila et al., 2021).

So, digital transformation changes the role of sales from “selling classical products with the classical tools” (Überwimmer et al., 2021). The ways of interacting change and the roles each user (buyer or supplier) plays become blurred in the digital platforms (Kumar et al., 2018; Mathmann et al., 2017). Nonetheless, salespersons still have a valuable role when customers request more complex solutions (Ahearne & Rapp, 2010) and today’s buyers are increasingly asking for complex combinations of services and products (Singh et al., 2019). When the solution is complex the sales process itself tends to be more complex and the deal is not made just between two people but also the hierarchical levels of both buyer and seller companies must be considered. Selling complex solutions requires more face-to-face encounters to close deals compared to selling simple solutions and products and therefore the digitalization of a complex sales process is slower. (Rodríguez et al., 2020)

Digital transformation and sales channel digitization change many things in sales, such as the value creation of salespeople which will shift from order handling to a more consultative role, especially for complex products (Thull, 2010 as cited in Singh et al., 2019). Though, some argue that value-creation function in sales profession will diminish (Singh et al., 2019). In any case, ways of working are changing quickly in the complex digital environment which requires quick learning, especially in terms of the above-mentioned customer value creation (Hartmann et al., 2018). Therefore, the sales force needs to develop a new mindset that welcomes and fosters change (Überwimmer et al., 2021). Table 6 gathers subjects affected by digital transformation in sales.

Table 6 Changes in sales caused by digital transformation and related phenomena like digitization.

Change	Source
Selling activities take place online via digital sales channels	Alavi & Habel, 2021; Überwimmer et al., 2021
Customers can place purchase orders without the involvement of sales representatives	Mahlamäki et al., 2020; Thaichon et al., 2018
More consultative role especially in the sales of more complex products	Ahearne & Rapp, 2010; Thull, 2010 as cited in Singh et al., 2019
Ways of contacting and communicating with customers	Singh et al, 2019; Überwimmer et al., 2021
Automation of routine tasks	Mattila et al., 2021; Syam & Sharma, 2018

Unlearning old routines	Mattila et al., 2021
Reorganization of the structure and roles of the sales force	Singh et al, 2019
Hybrid sales structure	Ramos et al., 2023; Thaichon et al., 2018
Multichannel strategies	Ramos et al., 2023; Thaichon et al., 2018

Mattila et al. (2021) emphasize the importance of unlearning beliefs and practices as part of digital transformation. According to Klammer and Gueldenberg (2019), individuals refrain from relinquishing their current habits and ways of working as long as the existing methods remain successful. However, when the environment changes it is necessary to unlearn outdated practices and discard false knowledge. (Klammer & Gueldenberg, 2019) This allows organizations to change processes into more efficient ones (Becker, 2010). Things to be unlearned in sales due to digital transformation have been studied by Mattila et al. (2021) and they identified the change of mindset organization-wide as one of the main themes. Also, they speak up for actively searching and identifying the need for unlearning by critically reviewing the “old” sales and managerial processes, for instance. (Mattila et al., 2021) Digital transformation also affects the structure and roles in the sales organization. Singh et al. (2019) claim that there is little information on how to structure and organize the sales force to operate soundly and effectively in the new environment. However, they’ve found out that many companies have altered the roles in sales into more specialized and the number of generalist salespeople is diminishing. (Singh et al., 2019)

Also, Thaichon et al. (2018) claim that digital transformation and the rise of e-commerce are evolving the sales structures – the traditional focus on the outside sales force has shifted to valuing the inside sales force which is extended with the successful use of online channels. They consider the hybrid sales model as the sales structure of the e-commerce era. (Thaichon et al., 2018) Hybrid sales model combines outside and inside sales and online channels (Ramos et al., 2023; Thaichon et al., 2018). Inside sales refers to salespeople who are remote and not engaged with any traditional face-to-face customer interaction, but they use different communication technologies. The role of inside sales has evolved into having strategic importance in customer value creation and different inside and outside sale configurations. (Ramos et al., 2023) Hybrid sales model requires cooperation between all the discrete parties in the hybrid sales model - inside sales, outside sales, and online channel - and value co-creation with the customer through all three contact points (Thaichon et al., 2018).

Dynamic capabilities are the enablers of hybrid sales (Ramos et al., 2023; Thaichon et al., 2018). According to Wilson and Daniel (2007), the required capabilities are 1) active review of “route to market” structures, 2) aligning sales structures with products and services, 3) creating innovative (sales) channel combinations, 4) integration of processes and IT to assist multi-channel customer relationships. Implementation of sales technologies, such as SFA, enables sales forces to accomplish their tasks faster and more efficiently and supports seamless, real-time communication between inside and outside sales and sales forces and customers which is central to the hybrid sales model (Thaichon et al., 2018). The hybrid sales model is illustrated in below Figure 11.

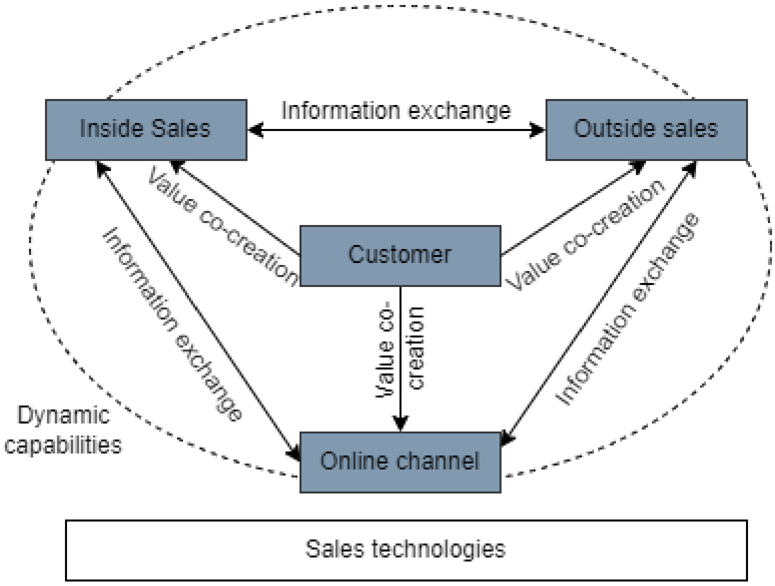


Figure 11 Hybrid sales process (adapted from Thaichon et al., 2018; Wilson and Daniel, 2007).

Digitization and digital transformation act as enablers of many improvements, but as in all major changes there are obstacles hindering the development. In their article, Wengler et al. (2021) studied major barriers to digital transformation in sales and in all hierarchical levels time constraint was named the number one barrier. The top three perceived barriers differed between managerial and employee levels otherwise: managers see the company’s lack of know-how and sales processes, which are not defined well enough to proceed with digital transformation as main barriers for digital transformation along with time constraints. However, employees consider the company having sufficient knowledge but see customers' know-how or use of different systems as barriers along with budget constraints. (Wengler et al., 2021) Organizational readiness in terms of capabilities and processes is important for a successful digital transformation process (Vial, 2019).

Alavi and Habel (2021) state that the human factor can hardly be overestimated when it comes to digital transformation in sales. They claim that digital transformation projects rarely fail because of technical issues but of companies' poor management of human factor. Salespeople are not afraid of new technologies as such, but they feel positive about the potential of digital sales technologies. However, they have concerns regarding job autonomy, for instance, being afraid that they could be monitored to a larger extent through the new technologies. (Alavi & Habel, 2021) Mattila et al. (2021) found that sometimes the digital transformation progress is slow due to unwilling individuals and slow changing organizational processes. This type of problem can be solved with managerial practices. (Mattila et al., 2021) Lastly, Wengler et al. (2021) claim that managers still follow "old KPIs" to measure performance and those are not applicable anymore. Suitable KPIs are needed as it is hard to manage a business properly in the digital era without those. (Wengler et al., 2021)

Unarguably digital transformation is going to change the role of sales. Some transactions take place online without the involvement of a sales representative, but offerings in B2B markets are getting growingly complex and customers more demanding – therefore, sales has a strategic role as the sales activity is changing to a more consultative, solution-selling approach and maintaining customer relationships is of great importance (Ramos et al., 2023). Digitization and digital transformation are underway and related challenges remain to be dealt with. As mentioned above, the human factor, both on an individual and organizational level, plays a big role in the success of the digital transformation. The next chapter looks at the new technology implementation theories.

2.3 New technology implementation

Change in business and society at large is strongly driven by technology (Becker, 2010) and taking new technology into use and integrating it into the company's existing systems is a commonplace and significant challenge (Karlsson et al., 2010). New technology implementation is primarily recognized as a management challenge (Becker, 2010; Karlsson et al., 2010) but the involvement of stakeholders is also important to realise the benefits of the change and technology implementation (Mlekus et al., 2018). The need to effectively handle change processes is likely to increase in the near future (Becker, 2010) but simultaneously it is acknowledged that many of these projects end up failing (Cozijnsen et al., 2000).

Researchers have studied and developed models and frameworks to provide help and guidance in the management of technology implementation and integration processes, but Mlekus et al. (2018) claim that most of them neglect technology's interdependence with organizational and human factors and rely too purely on the technological approach. Becker (2010) emphasizes the importance of unlearning during a technological change and it is influenced both by individual and organizational issues. Also, the results of successful technology implementation are twofold: organizations gain in terms of profitability and efficiency and individuals in terms of increased employee satisfaction, for example (Cozijnsen et al., 2000). Thus, it can be said that technology implementation has both individual and organisational implications which cannot be overlooked. The next two chapters take a closer look at both aspects. Noteworthy is that these factors exist in parallel and have an influence on each other, so it's likely that there is some overlapping content when the factors are examined separately.

2.3.1 Individual aspects

To realise the benefits of a newly implemented technology, such as productivity gains, the technology must be accepted and used by the organization's employees (Venkatesh et al., 2003). Individual characteristics affect the way new technology is received. Leonard-Barton and Deschamps (1988) state that there are a few key elements affecting the acceptance of new technologies. One of them is the extent to which it is important to the job, i.e. meets the felt need. (Leonard-Barton & Deschamps, 1988) The perceived need and usefulness are the general determinants of user acceptance; perceived usefulness is defined as the degree to which the user believes a certain technology would help him or her to perform the job better (Davis, 1989). Leonard-Barton and Deschamps (1988) claim that individuals who see a high need for innovation in their jobs are more likely to use technology than the ones who don't perceive the need. However, the willingness to use the technology of those with a low self-perceived need for technology can be positively influenced by managerial support. (Leonard-Barton & Deschamps, 1988) Overall individuals are prone to be affected by other's opinions and experiences (Mirvis et al., 1991); the impact of social influence varies depending on gender, age and experience and theory suggests that women are more sensitive to be affected by other's opinions, for instance (Venkatesh et al., 2003). The effect organizations have on individuals will be studied more closely in the next chapter.

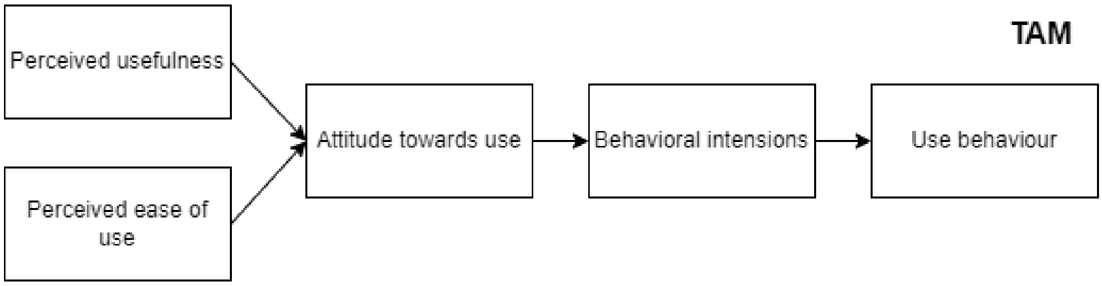
Already 30 years ago scholars (e.g., Mirvis et al., 1991) named end-user attitudes, usually meaning employee attitudes, one of the key challenges to tackle in the new technology adoption. 30 years later, scholars identify technostress caused by learning or utilizing a specific technological solution as a key challenge in new technology implementation (Jurek et al., 2021). The importance of support and training to help people adopt new technology and change work methods has been known for a long (Mirvis et al., 1991), but more recent studies take into account the impact of individual differences in the perceived level of stress (Jurek et al., 2021). Personal traits influence individuals' evaluation of the situation and shape their response to threats and changes (Näswall et al., 2005). For example, people with neuroticism tend to experience a range of feelings in the extreme and it usually correlates positively with job insecurity (Priyadarshi & Premchandran, 2021). Job insecurity is defined as the "*perceived powerlessness to maintain desired continuity in a threatened job situation*" (Greenhalgh & Rosenblatt, 1984). Uncertainty of change, on the levels of what will change and how it is going to impact the individuals, is also likely to increase the level of perceived job insecurity (Priyadarshi & Premchandran, 2021) and exposure to technostress (Jurek et al., 2021).

The key to coping with the negative consequences of rapid technological changes, such as job insecurity, is the early involvement of employees in the implementation process because it prevents the employees from forming reluctant attitudes towards the technology (Mirvis et al., 1991). In their study about change-related uncertainty in RPA implementation, Priyadarshi and Premchandran (2021) discovered that allaying the fears of those employees whose jobs are at risk because of automation and thus considering them for upskilling and redeployment is crucial. New technologies are going to create job opportunities in addition to the jobs they are likely to make obsolete and therefore upskilling and altering career paths are important to avoid job losses. (Priyadarshi & Premchandran, 2021)

Few theories are used to explain technology acceptance. One of the most popular ones is the technology acceptance model (TAM) originally introduced by Davis (1989) (Hess et al., 2010). TAM concentrates on the effect external variables have on internal beliefs, attitudes and intentions (Mahlamäki et al., 2020). TAM is based on four determinants which are performance expectancy, effort expectancy, social influence and facilitating conditions according to Venkatesh et al. (2003), but according to Wewerka et al. (2020), the model consists of four internal variables which are perceived usefulness, perceived ease of use, attitude towards use and behavioural intention to use. TAM has evolved since it was first introduced which is why there are different perceptions of its content (Lee et al., 2010).

Venkatesh et al. (2003) define performance expectancy as the degree to which an individual believes that a certain system would improve his or her job performance which corresponds to perceived usefulness (Wewerka et al., 2020). Effort expectancy refers to the level of easiness associated with the use of a system (Venkatesh et al., 2003) which is the same as perceived ease of use (Wewerka et al., 2020) Social influence means the degree to which colleagues or other important referent others think that one should or should not use the system and lastly facilitating conditions refer to the extent of individual and organizational support that exists for the use of new systems. (Hess et al., 2010) (2020) Wewerka et al. (2020) consider the social influence and facilitating conditions as external variables which impact the internal variables. They see the perceived usefulness and perceived ease of use as the primary internal variables which together influence the other internal variables, attitude towards use and behavioural intention to use. Perceived usefulness and perceived ease of use are influenced by external variables. Also, Benbasat & Barkhi, (2007, as cited in Hess et al., 2010) claim that performance expectancy explains mostly the variance in behavioural intentions while the other three determinants have a minimal effect on the acceptance. This study follows the perception of TAM by Wewerka et al. (2020) and considers the social influence and facilitating conditions as external variables.

Hess et al. (2010) claim that many of the acceptance modes, including TAM, are too descriptive and do not provide actionable insights for companies trying to address acceptance-related problems. They propose an alternative theory, the equity-implementation model (EIM) which was originally introduced by Joshi (1991) to provide an understanding of new technology users' resistance to change. The EIM suggests that individuals evaluate new technology in terms of equity through three social comparisons: 1) their own personal benefit from using or not using the new technology, 2) their benefits in comparison with the new benefits of some authority or organization, and 3) their net benefit compared with their peers (Hess et al., 2010). However, TAM and EIM are not mutually exclusive but according to some scholars the models can be combined to understand user acceptance even better (Guangbin WANG et al., 2020). Both models, TAM and EIM, are illustrated in below Figure 12.



EIM

Social Comparisons	Referent	Evaluation
1	Self	Change in one's own net inputs and outcomes
2	Self & Authority (Manager)	Asymmetry in equity status (net outcomes) between self and manager
3	Self and Others	Asymmetry in equity status (net outcomes) between self and others/peers

Figure 12 Acceptance theory models TAM (adapted from Venkatesh et al., 2003; Wewerka et al. 2020) and EIM (adapted from Hess et al., 2010) illustrated.

The first social comparison, the equity-self, captures the user's perception of the change in net outcomes resulting from adopting a new system. This is partially captured also in performance expectancy and effort expectancy constructs used in TAM, but they do not assess the benefits per se. (Hess et al., 2010) What is not covered in TAM is equity compared to others, including colleagues and authority. Individuals involved in social activities try to preserve equity between their own inputs and outcomes against the perceived inputs and outcomes of others (Guangbin WANG et al., 2020). In comparison with the authority the user assesses if the supervisor has profited too much from the user's efforts: if yes, the user seeks to restore the equity somehow. The equity-others construct captures the comparison of the benefits of a user with those of other referent users. If other users do better off than the user because of the new system, then the user may consider the new system to be unfair. The feeling of inequity is a determinant of intention and willingness to use a new system or technology. (Hess et al., 2010)

User acceptance models, such as TAM, consider how external variables influence perceived usefulness and perceived ease of use (Fig. 12) (Mahlamäki et al., 2020; Wewerka et al., 2020). Wewerka et al. (2020) studied the application of TAM in Robotic Process Automation and listed external variables relevant to the user acceptance model of RPA. The variables and their definitions are presented in Table 7 below.

Table 7 External variables affecting RPA user acceptance (adapted from Wewerka et al., 2020).

External variable	Definition
Social influence	Management’s commitment to new technology adoption
Job relevance	New technology applies to the job of the user
Result demonstrability	The impacts of using the technology are tangible for the user
Facilitating conditions	Availability of support by experts or training to users
Innovation joy	User attitude towards new technologies

Social influence, job relevance and result demonstrability influence positively the perceived usefulness and facilitating conditions and innovation joy correlate positively with perceived ease of use (Wewerka et al., 2020). The variables have an influence on an individual level, but the actions to strengthen the desired behaviour are usually organizational and will be discussed further in the next chapter. However, individual characteristics such as experience, voluntariness, age and gender moderate the influence of external variables on internal ones (Wewerka et al., 2020) Also Venkatesh et al. (2003) discovered the influence of these so-called moderating variables. For instance, gender, age, and experience moderate how social influence influences behavioural intentions so that the effect is stronger for women and older workers in the context of mandatory use and with narrow experience. (Venkatesh et al., 2003) In general, Venkatesh et al. (2003) state that gender and age are key moderators in technology acceptance, individually and together.

Also, a previous negative experience of learning a new technology or using technological solutions is a primary source of technostress which makes it more challenging for individuals to adapt to the demands of new technology (Jurek et al., 2021). They claim that the general attitude towards IT impacts how stressful learning new technology is perceived: people with positive attitudes tend to be less stressed about learning new technology. As with job insecurity (Priyadarshi & Premchandran, 2021), personality traits like neuroticism and anxiety-proneness have an impact on the perception of technostress and the nature of stress – extroverted and open-to-experience people might achieve positive work results when undergoing technostress related to learning new technology whilst people with neuroticism traits technostress affects negatively (Jurek et al., 2021).

An inevitable consequence of new technology implementation in organizations is that employees need to alter their practices and ways of working – adopt new practices and get rid of the old ones. This unlearning is a key part of change management in new technology implementation and there are both individual and organizational factors affecting employees' willingness and capability to unlearn previous habits and embrace change (Becker, 2010). Becker (2010) found five individual and two organizational factors that affect individual unlearning. Individual factors are

1. Positive outlook before the change
2. Feelings and expectations (toward the change)
3. Positive experience and informal support (during the change)
4. Understanding the need for change and
5. Assessment of new way.

Organizational factors are

6. History of organizational change
7. Organizational support and training.

George and Jones (2001) have studied the importance of individuals in organizational changes and they say that people use their schemas, which are cognitive structures used to organize individuals' knowledge and guide their behaviour, to process information and make sense of what is going on around them – this also happens when a change is presented to them. People face and react to change on their own basis and that is why there is always an emotional component to change which cannot be viewed or treated as a rational process (Diamond, 1996). Most of the individual factors of unlearning presented by Becker (2010) concern these differences in individuals' foundations and viewpoints of new technology and give implications for change management regarding what should be addressed in the new technology implementation. The next chapter takes a closer look at organizational factors in new technology implementation.

2.3.2 Organizational aspects and required resources

The above-described technology acceptance models TAM and EIM and individual unlearning factors by Becker (2010) are all frameworks designed for managerial use, in other words, to provide organizations with guidance on how to support individuals in the change and tackle common pitfalls in technology implementation. George and Jones (2001) highlight that organizational change processes are initiated and carried out by individuals in organizations, meaning that organizations only change and act through their members. Therefore, organizations have a facilitating role in the change and frameworks and models have emerged to support that purpose.

One of the essential facilitating conditions of change is the support provided for users in terms of training and education along with other support means such as documentation (Becker, 2010; Joshi, 1991). Joshi (1991), who stands for the equity model in new technology implementation, says that communication and training are essential tools for guiding user perceptions about incomes and outcomes the new technology requires and about the distribution of benefits. Wewerka et al. (2020) assert that the facilitating conditions (Table 7) are the most influential variable of RPA user acceptance and an essential success driver of RPA projects. They are also advocators of training which should be offered to the users as extensive sessions. (Wewerka et al., 2020) However, Venkatesh et al. (2003) claim that facilitating conditions only matter for older workers in the later stages of experience, otherwise facilitating conditions do not have a significant effect on the acceptance of technology.

In addition to training also communication has shown to be effective in preventing negative user attitudes. Intensive communication and practical demonstration of the advantages of technology are crucial – this relates to the high influence both result demonstrability and innovation joy (Table 7) have on perceived ease of use and perceived usefulness (Wewerka et al., 2020). Becker (2010) also emphasizes the importance of providing reassurance and proof of concrete methods of employee support and preparation as those will facilitate a positive outlook prior to the system implementation which is one of the seven factors influencing individual unlearning in new technology implementation. Jurek et al. (2021) claim that the way new technology is presented and communicated influences how technology is received. They state that if the information about the technology is presented in brief chunks including key points with a positive message in a form of a leaflet or graphic simplified instructions the technology is perceived as less complex in comparison to information presented as a scientific text. (Jurek et al., 2021) This is supported by Wewerka's et al. (2020) recommendation to pay attention to the user-friendly design of RPA.

In addition to effective communication of the change, Becker (2010) recommends engaging employees actively in planning and implementing the new technology to provide them with positive but realistic expectations of the change. Without engagement, employees build expectations of how the change might impact them without a realistic basis. (Becker, 2010) Often change and new technology are expected to harm individuals, for instance, by leading to job losses. Removing the fear of job losses and emphasizing new opportunities is a crucial success factor of technology (especially RPA) implementation projects. (Wewerka et al., 2020) Communication and engagement as means to remove the fears of individuals regarding job security are essential to prevent individuals from building up resistance to change (Macri et al., 2002). Resistance can be mitigated also by ensuring that individuals understand the need for change in terms of showing and justifying the need for a new system or technology by explicitly demonstrating the benefits compared to the previous system, for instance (Becker, 2010).

The role of leaders and leadership in change projects is established and known to be important (Macri et al., 2002). Also, RPA literature considers top management's support of the technology from early on an important success factor in the implementation project (Flechsig et al., 2022). Becker (2010) highlights that the commitment of top management is not enough but also the direct line managers should communicate their support and commitment to change in informal ways which are often received better by the employees: if employees consider the change as another "management fad" they are not likely to alter their practices.

Not so well-established concept of social influence is the influence peers have on one's experience and attitude towards technology. Venkatesh et al. (2003) utter that the impact of social influence (Table 7) is significant when the use of technology is mandated as often is in a work-related context. The influence is strong when the individual perceives that a peer or authority wants him or her to perform a specific behaviour and the peer or authority can reward or punish the behaviour (Venkatesh & Davis, 2000). The influence is, however, temporary as it seems to be important only in the early phases of the individual experience with the technology and diminishes over time (Venkatesh et al., 2003). The ability to reward or punish refers more to the influence of authority, but Becker (2010) claims that the informal support which often occurs between colleagues as well as between an individual and his or her supervisor has an impact on individuals' experience during the implementation project. Wewerka et al. (2020) recommend naming some employees as technology ambassadors who advertise RPA in personal contact with their colleagues. They study RPA implementation and argue that ambassadors together with management promoting the technology will exponentially grow the number of RPA projects. (Wewerka et al., 2020)

After the implementation, a determinant factor of user acceptance is the individual's perception of the new way of working (Becker, 2010) and user satisfaction (Lee et al., 2010). The perception formulates from the comparison of the new and old systems and whether the new system is easier to use compared to the previous one (Becker 2010). For those who implement the new system, it means the need to be aware of this ongoing assessment. In the case of RPA implementation, it is important to conduct a thorough evaluation of the potential use cases, because any automation should introduce tangible benefits or otherwise it is not worth it for the employees to learn the use of RPA (Wewerka et al., 2020). Organizations should leverage the feedback and hear the experiences of users to fix issues and develop the system (Becker, 2010). A reliable and trustworthy operation of the new system should be ensured even though it doesn't have a significant effect on the perceived ease of use (Lacity & Willcocks, 2016b; Wewerka et al., 2020). Finally organizational factors might affect individual's capabilities to embrace the change. Becker (2010) claims that the history of changes in the organization impact individual's expectations of the new change projects. She says that it is hard to influence past experiences, but acknowledging the mistakes made previously might be a good starting point to mitigate individuals' doubts about new technology implementation. (Becker, 2010)

The means to manage change and support individuals in new technology implementation are gathered in below Table 8 with the respective sources.

Table 8 Organizational actions to be taken to foster user acceptance in new technology implementation.

Action	Source
Extensive communication throughout the change	Becker, 2010; Jurek et al., 2021; Wewerka et al. 2020
Employee engagement from early on	Becker, 2010; Macri et al., 2002
Availability of training and support	Becker, 2010; Joshi, 1991; Venkatesh et al., 2003; Wewerka et al., 2020
Ensure management's engagement	Becker, 2010; Flechsig et al., 2022; Macri et al., 2002; Wewerka et al., 2020
Peer support and use of ambassadors	Becker, 2010; Venkatesh & Davis, 2000; Venkatesh et al., 2003; Wewerka et al., 2020
Emphasis on informal support	Becker, 2010
User-friendliness of systems	Wewerka et al., 2020
Actively promoting the new system	Becker, 2010; Wewerka et al., 2020
Ensure reliable operation of the new system	Wewerka et al., 2020

Lee et al. (2010) claim that when organizations provide sufficient support for their employees to use the new system employees will more easily use and access the system. They consider organizational support to consist of formal and informal support. Informal support means communication with peers and supervisors and formal support training and education provided by the organization (see Table 8). They claim that organizational support reduces employees' stress from using systems. (Lee et al., 2010) Means to prevent stress are of use as stress is more likely to develop when the use of technology is mandated. In private life, people can choose what technology and systems they like to use and try alternatives and stop using a system if it is not pleasing. In work-related situations that is not usually possible and therefore technostress is more likely to occur in such circumstances. (Jurek et al., 2021)

Griffith and Northcraft (1996) claim that the combination of information given to users before implementation and the form of training affect the success of technology utilization. They argue that users who are provided with a positively biased description of the technology and permitted free training will use the technology more successfully than the users provided with more balanced, realistic information. (Griffith & Northcraft, 1996) Free training means time provided for users to explore the technology and gain understanding whilst the organizational work is not evaluated during that time. The alternative, on-the-job training, requires users to complete work and learn to use the technology. (Griffith & Northcraft, 1993, as cited in Griffith & Northcraft, 1996) The on-the-job training exposes users to costly surprises which discourages the use of technology further; in free training, the trial-and-error learning is rather costless to the user (Griffith & Northcraft, 1996).

Executing the above-mentioned actions and supporting employees in the use of new technology requires resources from the organization. Considering financial resources, Björkman et al. (2004) suggest that a reward system would stimulate employees to collaborate especially across departmental and functional boundaries. On the other hand, Karlsson et al. (2010) suggest that symbolic and non-financial incentives have a significant impact in this regard as well. The education and training, especially formal ones, called after in multiple studies requires financial resources from the organizations. However, the importance of formal training cannot be underestimated as the implementation of any technology is jeopardized if the employees do not know how to use them right (Lee et al., 2010). In some cases, organizations need to invest in new human resources in terms of recruitment (Karlsson et al., 2010) or redeploy and upskill the existing staff (Priyadarshi & Premchandran, 2021).

The required actions and resources depend on the technological advancement of the organization's product and the technological maturity of the organization which includes previous experience in new technology implementation (Karlsson et al., 2010). In their study about new technology integration mechanisms, Karlsson et al. (2010) discovered that organizations with high-technology product processes and culture-based mechanisms tend to be the dominant approach, similar to organizations with high technological maturity. Under the category "processes" belongs, for instance, the use of information systems and a great level of communication throughout the implementation and integration process. Culture-based mechanisms try to manage and change corporate culture in terms of attitudes, beliefs, values and reactions to change. (Karlsson et al., 2010) The rest of the integration mechanisms originally introduced by Harrison (2004, as cited in Karlsson et al., 2010) are structures and resources. Structures include interventions in form of job rotation and reward systems including non-financial incentives and resources including actions in the human resources, both internally (training) and externally (recruitment) (Karlsson et al., 2010). Organizational factors combined with individual differences in the effective influence mechanisms (e.g., Venkatesh et al., 2003) make it difficult to find the right ways of guiding the change.

Plaza et al. (2010) claim that the success of IT projects comes down to two things: the capabilities of the project team and knowledge transfer among teams. However, the implementation of new technology is also all about the change and people's resistance to change might as well make efforts in the new technology implementation obsolete: employee resistance is the primary reason in most cases of change program failure (Reynolds, 1994). Reynolds (1994) emphasizes the role of managers in understanding how individuals react to change and leveraging that in change management. He states that resistance and denial are phases everyone goes through when exposed to change. Building trust and ensuring that employees' concerns are addressed during this phase is important. (Reynolds, 1994) All the means and methods to support employees in the change process discussed in this chapter aim to ensure that the resistance wouldn't formulate in the first place or that it could be controlled and mitigated. This is achieved with a bundle of actions rather than just with one action alone (Becker, 2010; Wewerka et al., 2020) and the right actions depend partly on the company characteristics (Karlsson et al., 2010).

2.4 Robotic Process Automation implementation framework for sales support

To summarize the theory chapter a framework for RPA implementation in sales support is formed and presented in below Figure 13. The framework utilizes previous Figures presented in this study and summarizes the key theoretical findings relevant to the implementation context. For clarity, the framework is divided into three dimensions which are *the business process, RPA-related activities* and *the RPA process*. The core is the RPA process at the bottom of Figure 13 and the other elements of the framework are linked to the specific stages of the RPA process. The red dashed lines show the dependencies between activities and the process steps.

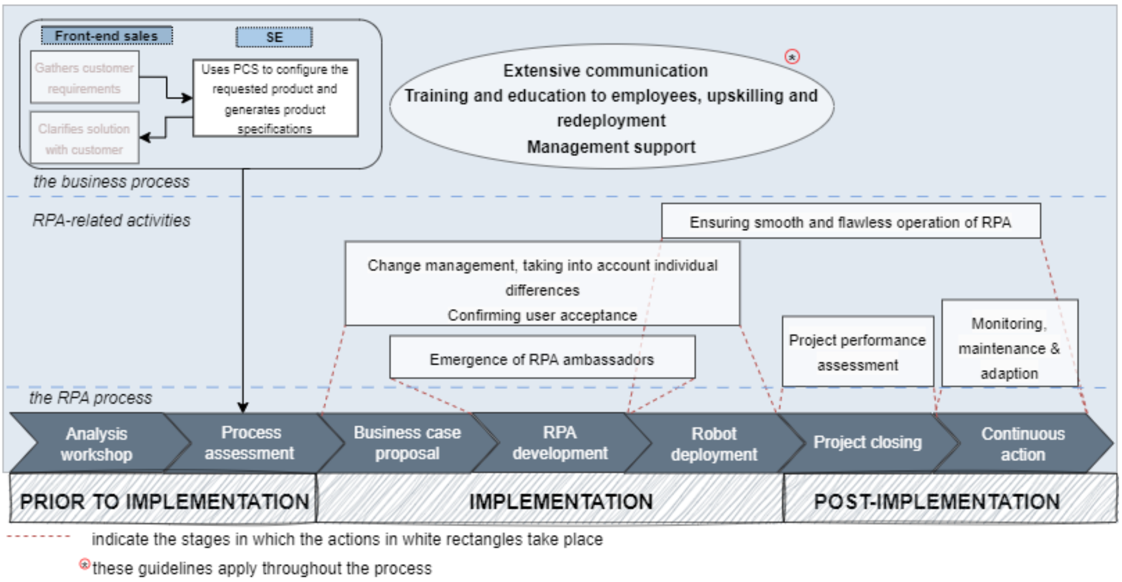


Figure 13 RPA implementation framework for sales support.

As shown in Figure 13, the processes in evaluation to be automated focus on the job and tasks of SEs because they are the target group of this study and primarily affected by the study's outcome. However, SEs are in close collaboration with other departments (J. M. Wilson & Hunt, 2011) and automating parts of their work might affect the way of working also cross-teams. The review of the tasks to be automated should be a thorough examination to make sure that automation will provide real benefits to the users (Wewerka et al., 2020).

The job of an SE changes continuously, but not all SEs welcome change positively, but most of the SEs just surrender to change: changes are painful for them, but they'll eventually adapt and accept the inevitable (Levine, 2007, p. 20). Therefore, it is important to provide training and education on RPA from the beginning to mitigate the stress and resistance to change (e.g., Becker, 2010). Other actions that should be in place for the whole process are extensive communication and management support. The latter is the basis of change management literature (Macri et al., 2002; Reynolds, 1994) and is also acknowledged in the research on RPA user acceptance (Wewerka et al., 2020). Extensive communication reduces the uncertainty related to change and can help to reduce related stress and resistance (Jurek et al., 2021; Reynolds, 1994). The framework includes the utilization of RPA ambassadors because of the importance of peer support (e.g., Becker, 2010) and so-called opinion multipliers who advertise RPA to their colleagues in personal interactions (Wewerka et al., 2020). The engagement and early involvement of employees in the technology implementation have been left out of the framework even though some studies speak up for it (Becker, 2010; Macri et al., 2002): Wewerka et al. (2020) discovered that user involvement in the RPA design and testing didn't have a significant impact on user acceptance, but the users should be informed of RPA benefits through practical demonstrations instead.

In the steps of RPA development and robot deployment change management practices should take place, taking into account the individual differences which influence the way change and new technology are perceived. Individual factors, such as age, gender and experience moderate the impact of external variables, such as social influence, on the internal variables of TAM, which either directly or indirectly affects an individual's intentions to use technology (Venkatesh et al., 2003). The moderating variables influence technology acceptance, especially in the conditions of mandated use (Venkatesh et al., 2003). When the robots are deployed and in use, it's essential to ensure their trustworthy operations because the perceived ease of use is significantly affected by users' trust in RPA robots (Wewerka et al., 2020).

Finally, the successful deployment of the first RPA robots facilitates the upscaling of RPAs (Flechsig et al., 2022). Returning to the beginning of the framework, the steps before implementation cannot be overemphasized: selecting the right tasks for automation is crucial for successful implementation. The tasks should be evaluated based on some predefined criteria, an example of which is the criteria presented in Table 4 in this study. Also, depending on if the RPA is taken into use first time at the organisational level or the department level a proof of concept (Lacity & Willcocks, 2016b) or business case (Carden et al., 2019; Flechsig et al., 2022; Fung, 2014; Santos et al., 2019) should be formed to accurately review the feasibility and benefits. Choosing the right tasks for automation is likely to influence user acceptance positively because the need for technology (so RPA) is then perceived (Leonard-Barton & Deschamps, 1988). All the factors in the framework are interdependent and cannot be treated separately – changing one affects the other. The framework in Figure 13 is tested and evaluated in the empirical part of this study.

3. RESEARCH METHODOLOGY

This chapter discusses and justifies the chosen research methods to conduct this study and deepens understanding of RPA deployment and implementation process in sales. Firstly, the research design and strategy are presented after which the methods for gathering data are explained and the suitability of the methods assessed. The reliability and validity of the research design are also discussed briefly. Lastly, the approach for data analysis is justified.

3.1 Research design and strategy

This study aims to generate an understanding of what factors inhibit RPA deployment in sales and what factors could foster it. Prior research lacks studies about RPA deployment in this particular context even though research about RPA deployment in business context exists. Therefore, this study aims to address the research gap in RPA implementation in sales. The approach to theory development is abductive (Saunders et al., 2019, p. 153): the study starts by exploring the prior literature and research about key theories, so RPA, sales processes and new technology implementation, and draws assumptions from these based on which a preliminary framework for RPA implementation in sales is created. The assumptions and hypotheses are then tested by gathering additional data which is used to modify and improve the initial implementation framework. In a situation where a topic or topics that have been studied extensively in one context but far less in the context which is currently of interest an abductive approach is feasible as it enables modifying existing theory (Saunders et al., 2019, p. 157).

The chosen research methodology is qualitative research because it enables answering the research questions and it supports the aim of this study which is to develop a conceptual framework and make a theoretical contribution (Saunders et al., 2019, p. 179). Qualitative research design is often feasible for preliminary study as part of some bigger project (Hakala, 2018). This research is supposed to be a take-off for the RPA implementation in the sales support team of the case company and to raise the opinions of the affected employees and qualitative research fits this purpose; it is used particularly when a possibility to be heard wants to be given to a particular population (Hakala, 2018). More precisely the research methodology is a mono-method qualitative study (Saunders et al., 2019, p. 179) because a single data-collecting technique is used. The research data is gathered through semi-structured interviews which are discussed more in chapter 3.2.

Considering the context and target of the study a single case study appears to be the most feasible research strategy as it provides a detailed, in-depth understanding of the topic under investigation (Yin, 2014, p. 4). Also, action research was considered, but this study is constrained timewise, which is a challenge for action research studies (Saunders et al., 2019, p. 204) and this study aims more to facilitate the change in the case organization than study the whole change project through thus action research was ruled out. Action research has many advantages that could make it suitable for this type of study in a different implementation as the researcher works closely with the participants and in theory could follow closely the process' evolution (Saunders et al., 2019, p. 204). Action research focuses very explicitly on the action and promotes change in the organization whilst this study aims to understand the factors that would foster the change and on the other hand what are hindering the change and implementation, so the case study fits the purpose better.

In a case study the case, which in this study is the RPA implementation project, is studied in its real-life setting and understanding context plays a fundamental role (Saunders et al., 2019; Vilkka et al., 2018). Case study as a research strategy has been applied in prior research on RPA implementation (Fernandez & Aman, 2021; Kokina & Blanchette, 2019) which supports case study's suitability for this type of research. Case study strategy has been widely used already for a long, but it has been criticised to lack representativeness and generalisability which is based on typical features of case study: the small sample sizes and subjectivity of the researcher and participants leading to interpretive qualitative research (Saunders et al., 2019, p. 197; Vilkka et al., 2018). However, according to Vilkka et al., (2018), generalisability of the case study's results is possible when the research is documented well and the conceptualisation made successfully; the level of how well the chosen case and concepts represent the studied subject enables generalisation in the given context. This study aims to create a framework for RPA implementation in sales support which could be applied not only in the case company but also broader in similar contexts.

As mentioned above, this study is timewise limited as it is a master's thesis study, and therefore it is conducted as cross-sectional research. According to Saunders et al. (2019, p. 212) when the subject of research involves a particular phenomenon at a certain time it is likely that the study will be cross-sectional. In this study, the phenomenon is the initiation of RPA implementation in the sales team which could be a subject for longitudinal study as well but the extent of this study is the primary limiting factor as it often is with academic studies (Saunders et al., 2019, p. 212). The compatibility of all the decisions made to formulate the research design has been evaluated based on the available research methodology literature (Saunders et al., 2019; Valli, 2018) and first of all the selections are considered to enable reaching the target of this study by answering the research questions. Table 9 presents the selected methods.

Table 9 Summary of the methodological selections.

Research design component	Selection
Methodology	Mono method qualitative study
Theory development approach	Abductive
Strategy	(Single) Case study
Time horizon	Cross-sectional
Data collection method	Semi-structured interviews
Data analysis method	Thematic analysis

The evaluation of the quality of the research and its findings is mainly determined by the level of care with which the research strategy is formed as a good research design reduces the possibility of getting the answers wrong (Saunders et al., 2019, p. 213). The main judgements about the quality of research are reliability and validity. Reliability means the repetitiveness of research results, in other words, the results are not random (Hirsjärvi et al., 2014, p. 231). Reliability can be proven, for instance, if two researchers end up with the same results (Saunders et al., 2019, p. 213).

Threats to reliability are related to either participant or researcher or both (Saunders et al., 2019, p. 214). In this study, the author tried to avoid participant error and bias by ensuring anonymity which should encourage participants to speak up their minds freely. The interview setting was also tried to maintain the same throughout the interviews, but as the interviews were remote the author couldn’t impact where the participant joined the interview. In every interview, a neutral and relaxed atmosphere was aimed to create to get the best out of every interviewee. One source of interviewee bias is called participation bias which roots in the character of the individuals who agree to be interviewed (Saunders et al., 2019, p. 448). As will be discussed later, this study utilizes multiple sampling methods and the aim was that most of the participants would have volunteered for the interview, but that didn’t happen. Most of the interviewees were asked to participate and there is a risk that the answers of those involved do not represent the whole team. The interviewees who agreed to participate are a heterogeneous group so that should result in a variety of viewpoints and thus reduce the risk of non-representable answers. It is also possible that the interviewees don’t answer the interview questions with complete honesty because of their position in the case organization (Saunders et al., 2019, pp. 447-448). The results show that people with the same background tended to give similar types of answers: participants that were part of the RPA operations in the case company spoke positively about RPA and its possibilities and it’s possible that they felt they had to do so. However, the author sensed they were genuinely excited about RPA and didn’t seem to praise RPA just because they are expected to do so.

The researcher bias was mitigated by recording the audio of each interview so that the answers could be checked later and to ensure that the right interpretations were made. Also, in the interview situations, clarifications were asked from the author's side in case of a misunderstanding and the author deliberately tried to avoid allowing any subjective views to affect the interpretations. The author was well prepared and equally aware in every interview to prohibit researcher error. According to Hirsjärvi et al. (2014, pp. 232-233), the reliability of a qualitative study is also improved by an explicit description of the study, including methods used and participant information. It’s important to document the data gathering precisely, for instance, the circumstances and places where the interviews were held and interview-specific data, such as duration and possible distractions. The interpretations the author makes from the data should be clearly expressed for the reader. (Hirsjärvi et al., 2014, pp. 232–233)

Validity refers to the appropriateness of the measures used, meaning the ability of the chosen measurement to measure what it is supposed to. The methods do not always measure the things the researcher thinks he/she is studying. (Hirsjärvi et al., 2014, p. 231) Validity can be evaluated by assessing the compatibility of the described methods and the interpretations made (Hirsjärvi et al., 2014, p. 232). The validity of a qualitative study can be improved by using multiple methods. The use of multiple methods is called triangulation. (Eskola & Suoranta, 1998, p. 69; Hirsjärvi et al., 2014, p. 233) There are multiple types of triangulations and in this study the triangulation of data is used, meaning that different type of data is gathered to solve the same problem (Denzin, 1970 as cited in Hirsjärvi et al., 2014, p. 233). The primary data is gathered through semi-structured interviews, and it is supported by the use of secondary data. A factor possibly compromising the quality of the research is the author being an internal researcher so working in the case company at the time of this study (Saunders et al., 2019, p. 219). There is a risk of the author being subjective and her interpretations being affected by the impression the author already has of the case company. This bias was tried to avoid realising by taking a perspective of an external and including “basic” questions, the answers of which were already familiar to the author, into the interview design as that is recommended by Saunders et al. (2019, p. 220).

3.2 Data gathering

The primary research data is gathered through semi-structured interviews conducted primarily in the sales team of the case company; the personnel in the Sales Engineering team will be directly affected by the topic under research and interviews will give a chance to these people to be heard and create meanings (Hirsjärvi et al., 2014, p. 205). The sample consists of employees in different hierarchical levels and different jobs to get a broader scope of insights into the research problem. A census, so to collect data from every team or business unit member (Saunders et al., 2019. p. 292) is not possible and it does not serve the goal of this study. Having fewer cases enables the collection of more detailed information on the topic (Saunders et al., 2019, p.295) which is of use to answer the research questions. This study utilizes a few different non-probability sampling methods. The probability sampling method is not compatible with the chosen research design (Saunders et al., 2019, p. 296) and this study doesn't aim to make statistical inferences from the selected sample but primarily targets to provide answers to the case company's issues, so find a way for RPA to take off in sales support process. Selecting samples randomly from a sampling frame wouldn't help to gain the right information to explore the research questions and therefore a subjective sampling technique serves the purpose here. Also, Henry (1990) advises against probability sampling when the target population is less than 50 cases.

Some of the participants have been selected using purposive sampling involving the selection of individuals that are well-informed of RPA and especially have a good understanding of sales support, so they know the context where RPA is supposed to be implemented. The same sampling method has been used in the prior literature on RPA implementation (Fernandez & Aman, 2021; Kokina & Blanchette, 2019) to ensure relevant data on the topic. Purposive sampling is the baseline for sampling, establishing a starting point for the interviews and data gathering. To be precise the adopted sampling method is heterogeneous sampling which means selecting participants with sufficiently different characteristics to create variation (Saunders et al., 2019, p. 321). As the research target is to create an implementation framework it is important to gather opinions broadly and therefore the purposively selected participants have different backgrounds. An eligible candidate is involved in the sales process, particularly in sales support and is familiar with RPA at least to some extent. However, an exception to this criterion is the members of the case company's RPA professionals, which are interviewed to understand better the RPA process in this particular company.

In addition, this study utilizes both methods of volunteer sampling, snowball and self-selection sampling. Snowball sampling is utilized with managers and experts, so in addition to the ones selected with purposive sampling, they can propose other relevant parties that could be interviewed for this research. Snowball sampling is based on cases identifying new cases and so forth (Saunders et al., 2019, p. 323) and it works in this context by helping to ensure that all relevant parties are considered to be interviewed for this study. Self-selection occurs when the potential cases are given the opportunity to decide if they want to take part in the study or not (Saunders et al., 2019, p. 323). Self-selection sampling is targeted at the members of the Sales Engineering team because they are the ones directly affected by the RPA implementation. Sales Engineers are the largest group targeted in this study and each of them has been given equal possibilities to familiarize themselves with RPA therefore it is hard to purposively select participants for this study. Cases that self-select usually do it because they have strong feelings or opinions about the research questions (Saunders et al., 2019, p. 324) and in this case, it is exactly what is needed because one aim of this study is to find out how to ensure the commitment of the employees to use RPA and what factors influence it and this is a way to get first-hand information about it. Self-selection is conducted so that the employees in the sales support team are given notice that this study is taking place and asking them to take part. It turned out that self-selection didn't work as planned as not enough participants signed up voluntarily. Reasons for this are not clear, but there are many possible reasons like haste, not being willing to do extra at work etc. Two persons of the minimum target five participants signed up voluntarily and the rest were asked one by one to participate.

The exact sample size is difficult to determine; Saunders et al. (2019, p. 317) give a guideline that 12 to 30 participants are a sufficient amount for a heterogeneous group. Many research methodology publications (for example, Eskola & Suoranta, 1998, pp. 64-65; Saunders et al., 2019, p. 315) suggest using data saturation as an indication of a suitable sample size. After data saturation is reached the additional data does not provide significant new information or suggest new themes (Saunders et al., 2019, p. 315). With a heterogeneous sample and a relatively small number of interviewees, saturation is unlikely to be reached. However, with a master's thesis study, the generalisability of results is not the main target and therefore the number of interviewees is not a key concern. It is anyhow recognized that the sample size might affect the generalisability and transferability of this study. This study started by aiming for 10 interviews because of time constraints and 10 was also the realised number of interviews.

Semi-structured interviews are selected as the primary data-gathering method. It matches the overall research design and provides a way to get relevant data for this study – a structured interview wouldn’t have given the needed room for the participants or interviewer to bring up things on the go, and an in-depth interview poses a risk that certain topics and questions that are relevant to answer the research questions wouldn’t be discussed (Hirsjärvi et al., 2014, pp. 208–209; Saunders et al., 2019, p. 438). Some room wanted to be saved for modifications in data collection in case all the right questions were not in place from the beginning and therefore a flexible data-gathering method is favoured.

The interviews are conducted as theme interviews which can be considered as a type of semi-structured interview – theme interviews are positioned between structured and unstructured interviews (Eskola et al., 2018) similar to semi-structured interviews and are based on themes rather than a strict pattern of questions (Saunders et al., 2019, p. 437). The themes of the interviews are predetermined including possibly some key questions, but the formation and order of questions can vary between interviews, allowing changing the emphasis of themes based on participants' positions and backgrounds (Eskola et al., 2018; Hirsjärvi et al., 2014, p. 208). As this study will include participants from different hierarchical levels and backgrounds this type of flexibility is beneficial. The themes are the same in all interviews, however, the emphasis of themes vary and RPA professional will be asked more questions related to the RPA implementation process whilst the sales domain will be more discussed with participants that have connections to sales. The interviews were conducted both as face-to-face interviews and internet-mediated interviews, using a suitable digital platform (such as Microsoft Teams). All interviews were audio-recorded and notes were taken during the interview as suggested by Saunders et al. (2019, p. 461): taking notes shows interest in the answers of the interviewee and provides a backup if the recording doesn’t work.

The primary data is complemented with secondary data. Secondary data means data that is collected initially for other purposes (Saunders et al., 2019, p. 338). The advantage of using secondary data is that it enables the author to triangulate the findings and compare data that the author has collected for this study with secondary data and it may lead to discoveries and insights (Saunders et al., 2019, p. 352). The secondary data used in this study consists of a presentation, a video, web pages and reports listed in Appendix C. All other data except the presentation, which is generated by the case company for internal use only, is publicly available. All the used secondary data is produced by profitseeking companies and the case company has been involved in the creation of the majority of secondary data used here. The validity and reliability of the data are affected by who collected and reported it (Saunders et al., 2019, p. 363). The data has been collected and reported by commercial providers and it is possible that the objectivity of the analysis and results might be affected by the commercial interest, and it is a potential source of biases. Also, the methodology describing how the data was collected is missing from all secondary sources used which also weakens the reliability and validity (Saunders et al., 2019, p. 363).

The data gathered with semi-structured interviews is prone to data quality issues. The concerns of data quality are related to the reliability of data, biases, generalisability and transferability and validity. (Saunders et al., 2019, p. 447) The research design is formed so that it would mitigate as many risks to data quality as possible, but the resources (time) are limiting the actions that can be taken. The author reviewed the interview questions both with a case company representative to make sure all the key themes are covered from diverse angels and with the university tutor to ensure that the questions are compatible with good research ethics so that they are not attitudinal or probing in a wrong way (Saunders et al., 2019, p. 459). The author also reflected herself how well the questions contribute to the research questions and this way the validity of data is guaranteed. The biases related to the interview situation, interviewee and interviewer were mitigated in the best way possible by the means described earlier in this chapter.

Interviews

Data from the interviews conducted in the case company are presented in Table 10 below. The interviews were designed to take a maximum of one hour, which seemed to be enough on average. The duration of the interviews varied between 30 minutes to a bit over an hour. All except one interview were held remotely via a digital platform (MS Teams). The intention was to keep more interviews face-to-face, but due to cases of illness, the interviews had to be moved to an online setting. For most of the interviews, an internet-mediated meeting was the only option as the interviewer and the participants were located in different cities, in some cases even in different countries. The different settings of interviews can be a source of bias, but no difference was recognized in interviewees' responsiveness or attitudes between remote and live settings. In below Table 10, the basic info of each interview and interviewee is presented. Each interviewee has a code which is used to refer to the interviewees further in the text.

Table 10 Interview data.

Interviewee	Date	Responsibility	Duration	Live/remote
I1	27.10.2022	Manager, RPA team	67 minutes	Remote
I2	1.11.2022	Director, Business Unit where SE belongs	62 minutes	Remote
I3	1.11.2022	Sales Engineer	50 minutes	Remote
I4	2.11.2022	Sales Engineer	28 minutes	Remote
I5	2.11.2022	Sales Engineer	40 minutes	Live
I6	4.11.2022	Sales Engineer	29 minutes	Remote
I7	7.11.2022	Sales Engineer Team Leader	25 minutes	Remote
I8	8.11.2022	Manager, acquainted both with sales and RPA	40 minutes	Remote
I9	11.11.2022	Sales Engineer	34 minutes	Remote
I10	16.11.2022	Manager, a team in the I2's Business Unit	44 minutes	Remote

Three interview structures were designed considering the background and (hierarchical) position of the interviewee. The main group of participants, Sales Engineers, had their own structure and questions, as did managerial participants and RPA experts. All structures are presented in Appendix A. There were three themes discussed in the interviews: *attitude towards RPA*, *RPA implementation process* and *RPA in Sales Engineering*. The emphasis and questions varied depending on the participant's background and viewpoint and not all themes were discussed in all interviews, for instance, the RPA manager was not asked questions regarding his attitude towards RPA, such as his motivation to use RPA, as the author presumed that it is not relevant topic to discuss with him.

Appendix B presents the interviewee's position in the case company's organisational chart. The interviewees are marked in blueish colour. The organization chart is not perfect, but it only includes the teams and business units of the interviewees. The chart starts from the CEO level to show how the participants are positioned overall in the company. The job titles have been simplified to avoid confusion and keep the chart as simple as possible, in reality, many different titles correspond to “Manager” and “Expert”. As shown in Table 10, most of the interviewees were Sales Engineers and from the same business unit where Sales Engineering belongs. Two participants came from other business units. One interviewee (I10) is a manager of a team that works closely with the SE team and is responsible for most of the tools and systems used in SE work.

Table 11 includes brief information about all interviewees. An interesting fact that unites the interviewees is their time in service at the case company. For 9 out of 10 interviewees case company has been their first and only employer during their career and they started working for the case company directly after graduation. All of them reported long working years in the company, all being over 10 years. I3 and I10 make an exception with fewer years spent in the company. I10 has worked for the case company for 9 years in several positions and I3 has been in the company for only 1 and a half years and the whole time in the same position. Another common fact about the interviewees is the long time in the same position: some of them have worked in other positions before the current position but spent several years already in the current position. All Sales Engineers except I3 have worked in Sales Engineering for over 10 years.

Table 11 Interviewee information.

Interviewee	**Gender**	**Job description and background in the case company**
I1	Male	Manager of the RPA team. Over 10 years in the case company, worked in project engineering before this role. Experienced with RPA.
I2	Male	Director of the Business Unit which includes Sales Engineering. Over 20 years in the case company, various roles within Sales.
I3	Male	Sales Engineer. Joined the case company 1 and a half years ago. Before the case company worked in another profession.
I4	Female	Sales Engineer. Over 25 years in the case company, approx. 15 years in this role.
I5	Male	Sales Engineer. 16 years in the company from which 12 years in the current role.
I6	Male	Sales Engineer. 11 years in the company, the whole time in this position.
I7	Male	Sales Engineer Team Leader. In the case company for 15 years, 11 years in Sales Engineering.
I8	Male	Manager in another Business Unit. 15 years in the company, and the last 6 years in the current role. Experienced with RPA.
I9	Male	Sales Engineer. 11 years in the company, the entire time in Sales Engineering.
I10	Male	Manager in a team in parallel with the SE team. 9 years at case company in various positions. Experienced with RPA.

The gender of the interviewees was added to above Table 11 during the data analysis as it seems to have an impact on the findings. Also, new technology implementation literature suggests that there are differences between men and women in the way technology is perceived and therefore gender is included here to increase research transparency and reliability.

3.3 Data analysis

The chosen data analysis method that supports the aim of this study is thematic analysis. Its purpose is essentially to search for themes or patterns that occur across the dataset so in this case across interviews (Saunders et al. 2019, p. 652). Thematic analysis is considered a generic approach to analysing qualitative data and it is flexible in terms of the size of the data to be analysed and the purpose of the study (Saunders et al., 2019, p. 651). Thematic analysis fits the overall research design of this study as it is not tied to any particular research strategy (Saunders et al. 2019, p. 652). Compared to other qualitative analysis methods thematic analysis is quite straightforward and the author's contribution can be exploited in the analysis work itself whereas more particularized methods require spending time on checking that the rules for analysis are followed (Saunders et al. 2019, p. 652). The analysis in this study aims for identifying key themes that affect the RPA implementation in the sales support context and thematic analysis supports that aim and gives flexibility to the author to conduct it in a way suitable for answering the research questions.

The analysis was built around the research questions. The interview design followed themes that largely reflected the research questions and thus a logical way to present and discuss the results was to group them according to the research questions, each research question presented in a separate subchapter. Some recurring patterns and factors were be identified from the results regarding each research question and these were gathered into summarizing tables. These emerged factors, combined with appropriate literature, were the basis for the main findings. The influence of the interviewee's background, such as his or her position in the case company, was also considered in the analysis to explain differences across interview results. As the participants had different positions in the case company and thus had different perspectives on the studied issue it was considered important to take into account also the possible influence of a person's overall background in his or her interview answers. For instance, the participant's experience and knowledge about RPA seemed to affect how the current RPA implementation model at the case company was perceived.

4. RESULTS

This chapter presents the results of the study. In the first subchapter, the RPA process and implementation at the case company are presented because it is necessary background information to answer the research questions. In the following subchapters, each research question is discussed. Firstly, the prerequisites and current obstacles for sales support process automation are presented from both the task and employee perspectives. Secondly, the individual and organizational factors affecting the commitment to use and deploy RPA are discussed. Thirdly, the resources needed by the organization to implement RPA are presented and finally, the opinions on the prioritization order of tasks to be automated are discussed.

4.1 Robotic Process Automation in the case company

The case company has a unique way of implementing and using RPA: it relies on the engagement of people and the automation is done completely in-house instead of outsourcing anything (UiPath 2019b; 2022). This way of working was partly selected because RPA would be used in critical business processes and it's not obvious to outsource such processes (UiPath 2019a). When the RPA vendor was selected it was a key element that they supported this way of working. A lot of effort has been put to involve staff in the automation, not just impose them on it but to make them "do it happily". (UiPath 2022) This approach faced resistance in the beginning, so the way has been rocky and convincing people to do the automation themselves took time because it is a change of mindset (UiPath 2019a). But hard work has paid off because once the key users, or "Citizen Developers" as they are called at the case company, were taken on board to the process automation they were encouraged to bring their ideas to the table. Today another of the case company's divisions (the one where the SE team belongs) has over 100 citizen developers and more than 900 people have completed the training offered to staff. Even though not all trained people will end up being "Citizen Developers", they help to spread the awareness of RPA across the organization by becoming ambassadors of the case company's RPA efforts. (UiPath 2019a; 2022)

The implementation of RPA in the case company relies on the business process experts that are engaged in the critical processes and their involvement in the automation process (UiPath 2022). In this type of approach, it is necessary to get the business process experts active in the search for new automation opportunities to obtain the maximum benefit of RPA (Hallikainen et al., 2018). The creation of RPA is conducted so that first the business process experts, or so-called “key users”, recognize the need for automation in their work and make a preliminary automation design themselves. This preliminary automation is called minimum viable product (MVP). After the initial automation is developed the RPA team steps into the picture: it is responsible for shaping and finalizing the code and deploying the automation on a robot. (Hudd, 2022) The reason for this type of model is that the “Citizen Developers” know their own job the best and will recognize whether a task is suitable for automation or not and they know the process by heart (I1). It is also the easiest way to change the process: it is perceived differently if the business process expert decides to automate something his-/herself or if someone from IT management comes and explains that some things need to be automated. Firstly, this IT person doesn’t know the process and secondly, the business process people might pose a negative attitude toward the automation because someone from outside suggests it. (UiPath 2019a)

The central RPA team does not take a stance on the automation possibilities and does not recommend where automation should be used; the ones who know the process best are the best ones to judge if automation is feasible (I1). An option would be to make the RPA development central and only gather ideas from business process staff, but the RPA team does not know the processes and wouldn’t know how to automate them (I1, I8). I8 said that he once tried to develop an RPA for another team’s need and even though the process seemed rather simple, the automation ended up taking a lot of time both from the developer and the business process expert, because what might look like a simple task to someone doing it daily probably isn’t so simple to explain to an “outsider” after all (I8). I8 even said that learning other people’s work is even harder than learning to use and deploy RPA.

The Citizen Developers have a key role also in the maintenance of the robots. When a process is changed or a system is updated, the citizen developer notifies the central RPA team and advice on how to update the robot. (Hudd, 2022). If the responsibility of updates would be only with the RPA team, they wouldn’t know what to do, for example, if there is a new pop-up window in the system during the process (I1). I1 emphasizes that getting people involved in RPA development is part of a greater aim of digitalizing people and teams, in other words, increasing their digital capabilities. Figure 14 below illustrates the RPA creation and maintenance process and its responsibilities.

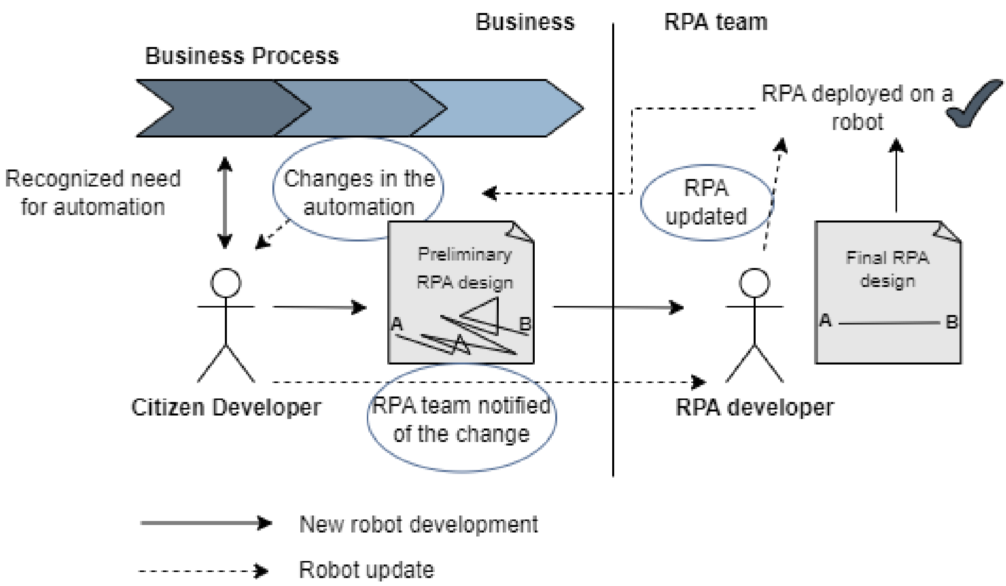


Figure 14 RPA process in the case company (adapted from I1 interview; Hudd, 2022; UiPath 2022).

As shown in Figure 14, the preliminary RPA design created by the business process experts or Citizen Developers is rarely the optimal solution, but the important thing is that it gets the task done. It is the responsibility of the RPA team to make the line from A to B straight and ensure that the automation is compliant with all requirements, e.g., concerning cyber security. (I1, I8) A previous research finding from Lacity and Willcocks (2016b) implied that RPA implementation should not be conducted entirely outside the IT department because RPA has to be compliant with general IT governance. In the case company, the RPA team is responsible for making sure of automation compliance (I1).

In the case company, RPA is adopted broadly across the company's division (Hudd, 2022; UiPath 2022) but sales is one of the least automated departments (Hudd, 2022). This is a general trend and Bangia et al. (2020) discovered that automation implementation in sales is lagging behind other functions, such as finance. This finding is also supported by the lack of research about RPA deployment in sales which was discovered earlier in this study. I1 says that the difference between departments' level of automation is partly explained by the nature of the job – repetitive tasks with a high volume of transactions is a strong natural incentive to automate. However, he says that not any department has an excuse regarding automation but the automation starting points vary between teams (I1). Bangia et al. (2020) argue that a third of sales processes could be easily automated with today's technology. They claim that 43 % of configuration, quotation, pricing related tasks could be automated – so almost half of the work that is currently the responsibility of the Sales Engineers in the case company (I3, I7, I9).

Promoting the approach for the employees hasn't been easy and as said before it has faced resistance, but the efforts have paid off and the case company has managed to convince employees of RPA and the approach and now they have a strong self-supporting community across the organization (Hudd, 2022; UiPath, 2019a; UiPath, 2022). However, in the Sales Engineering team, the current model receives a lot of flak from some participants (I3, I4) who argue that it is waste of time and resources to train everyone to use RPA and that the responsibility of robot creation should be with the RPA team entirely who know the technology. I5 and I6 give a more cautious criticism of the approach and say that it is difficult to maintain the knowledge when the technology is needed only occasionally, and it takes a big effort trying to memorize how to use the software and so on. Maintaining the current approach indeed requires key users and Citizen Developers to be continuously trained and their knowledge needs to be updated (Hallikainen et al., 2018). Figure 16 shows the current onboarding model at the case company.

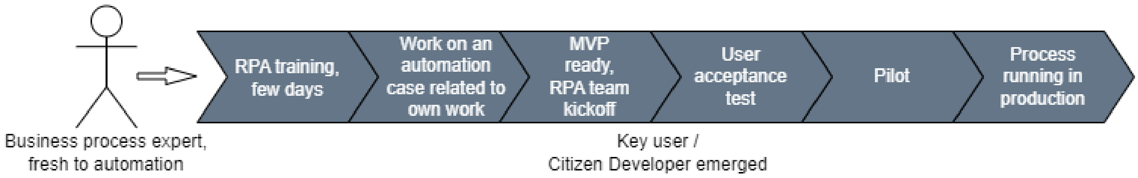


Figure 15 Key user onboarding process at case company (adapted from UiPath, 2019a and interview I1).

All the interviewed Sales Engineers (I3, I4, I5, I6, I7 and I9) have completed the first step and attended an RPA training. However, none of them continued the process further and became Citizen Developers, but I6 continued to study RPA after the training but finds it quite difficult. A couple of other SEs (I4, I5) tried to automate a task with colleagues and continue further in the onboarding process after the training but got stuck at some point and didn't seek help. The perception of automation is generally positive (all interviewees), but the current way of working with RPA (I3, I4, I5, I6) and RPA suitability for Sales Engineering work raises doubts among the participants (I4, I5). In the following subchapters, these tensions are discussed further through the research questions.

4.2 RQ1: What are the prerequisites for automation of the sales support processes?

The work of a Sales Engineer is generating offers for network sales as its simplest (I6, I9). More precisely, the network sales receives an RFQ from the customer and the salesperson then contacts SE and requests a quotation (I3, I9). SE reads through the customer specification to see what can be offered and configures the scope of supply (I3, I4, I9), either by himself entirely or together with SEs from other product groups depending on the scope (I9). SE is also in charge of the pricing (I3) and once everything is ready SE sends a commercial offer and technical specification to network sales who then forwards it to the customer (I9). In addition, SEs answer customers' technical questions (I4) and attend project-related meetings (I7). SEs are responsible for quotation handling and the above-described process is very similar to the MTO companies' customer enquiry handling process presented in Kingsman et al. (1996) (Figure 9, chapter 2.2.2). Figure 16 illustrates the RFQ handling process at the case company as explained by the participants. This process is the context of the study and later in the text, the sales support process refers to this process.

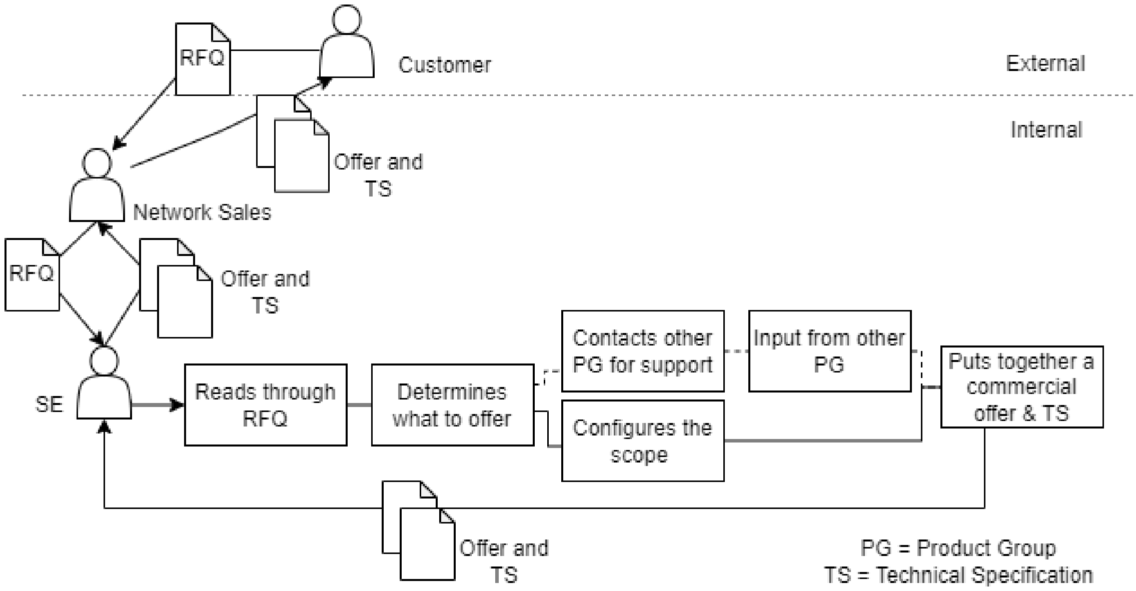


Figure 16 Simplified customer RFQ handling and SE process at case company (adapted from interviews I3, I4, I7, I9).

The prerequisites for the automation of sales support processes were discussed in the interviews both from a human and process point of view. It became evident during the interviews that participants from the SE team (I3, I4, I5, I6, I7, I9 and the team's director I2) did not know the technology well enough to evaluate the technological limitations and barriers of RPA and reflect that on determining the prerequisites for sales support process automation (I2, I3, I4, I5, I7). Instead of asking the participants to evaluate sales support tasks' suitability for automation, which was initially one question in the interview design, the interviewees were asked to think of use cases for automation in SE work.

The SEs didn't come up with too many ideas for automation (I4, I5, I6, I7, I9), but they consider that the tools and software used currently are already so advanced that the development should be done directly to the system and not with RPA (I4). The systems seemed to pose a problem for automation for many. I6 said that systems updating all the time are an issue for automation because then the RPAs should be also changed constantly. I9 argues that the current quotation system is so old and complicated that he doesn't think that automation would make it any better or more logical. Because robots mimic the way humans work and perform tasks alike, they are also exposed to the slowness of the servers and systems. I5 wondered if the implementation of robots would save so much time after all because the slowness of systems is what takes time in the processes and robots would suffer from that, too. Hallikainen et al. (2018) discovered this issue in their study: a lot of problems occurred because robots worked faster than humans and did not wait for responses from the applications.

So, the systems and software used in SE work might be a problem for automating the tasks. I1 says that the processes should be first fixed before automation to avoid bad outcomes because RPA won't fix the "broken process", but the automation will repeat the same errors faster and produce incorrect outcomes in bigger quantities. He advises defining the process well before moving to automation (I1), so a well-defined process is a prerequisite for automation. I7 argued that the processes are as fine-tuned and well-functioning as can be achieved with system improvements and thinks that something new, such as RPA, is needed to get develop the processes further. Other SEs think that there are places for improvements in the current processes, but opinions on the means to improve those differ. I4 thinks that the improvements should be made directly to the systems and not implement RPA there at all. I3 is not sure if the systems should be fixed or improved before implementing RPA. I9 says that part of the current systems is so illogical and outdated that those should be replaced to fix the process. Automation might help a little bit, but hard to say if it will simplify things as the system itself is not logical (I9).

Better integration of systems is hoped for by many, for instance, currently, if data already exists in some system it doesn't transfer to other systems, but the user needs to manually insert the data, which increases the risk of errors (I6, I7, I9). I2 says that often needs for improvements in the process are discovered when something new is implemented or during a development project, otherwise it is hard to pinpoint the problems in the system. I5 and I9 recognize that one becomes blind to his own job over time and considers the processes and ways of working obvious and it makes it difficult to identify possible cases for automation. Both say that an outsider could spot the need for automation easier. This was sort of proven true during the interviews as I2, who knows the SE process well but doesn't have his hands in it came up with many more ideas for automation compared to the SEs. I3 also affirms that coming up with ideas for automation is the hardest part.

Both I8 and I10 say that RPA can provide a temporary solution for system integration problems, emphasizing the temporariness because process flaws fixed with RPA tend to be vague solutions (I8):

> "*Often when a system or process has been tried to be fixed with RPA it is a "duct tape" solution which is wrong. This doesn't mean that we shouldn't use RPA, quite in the contrary, but it should be carefully evaluated whether we have a broken process which should be fixed and not turn to RPA by default.* "- I10, Manager, SE's parallel team.

RPA provides a lucrative alternative for traditional IT integration projects because it is cheaper and faster to execute (I8, I10) as also discovered in the literature (Osman, 2019). Traditional IT development projects are often costly, time-consuming and complex (van der Aalst et al., 2018) and therefore RPA might be a good alternative to get a solution quicker (I10) because RPA solutions usually have a relatively short time-to-market (I1, Hegde et al., 2017). I2 pointed out that usually the system development projects and ramp-up take a lot of time in the case company, and he wished RPA could bring in a change in this matter. Process maturity was defined as one of the criteria for a suitable task for automation (Hegde et al., 2017; Willcocks et al., 2017) and it appears to be a factor to be checked also in the case of the case company before automating processes.

I1 says that in this model of RPA implementation, it all comes down to people and their interest in automation. If the person is not interested to do it, he/she will not find the time to do it.

> "*This (automation) is not a task you can delegate someone to do. You can maybe hire someone to do it because then you hire someone that is eager to do it, but you can't delegate the task to a person that is not interested because he's not going to take the time to do it.* "– I1, Manager, RPA team

In the SE team, it seems that the biggest barrier to come across to automate sales support processes is the human factor. There is both a lack of knowledge of RPA and a bit of resistance towards the current way of working with it. The SEs are not unanimous about RPA: some are more positive about it than others, but they all recognize the lack of skills and knowledge as the main challenge (I3, I4, I5, I6, I7, I9) Also, participant I8, who is well aware of the RPA situation in the sales function names the user's motivation as the main challenge for RPA use. Changing the mindset of the team (I1) is the first hurdle to come across. However, the SEs are not negative about RPA as technology, but they don't see the current model of implementation as feasible and see it as unnecessary to learn the RPA development themselves when there are experts who know what they're doing (I3, I4). Commonly the SEs see the rareness of RPA development as a hindrance to RPA use: I5 says that if something is done only twice a year it is hard to memorize how things work and it takes a lot of time. I4 considers the current implementation model the biggest obstacle for RPA use in Sales Support and compares it with changing the tyres of a car:

> "*It's like the change of car's tyres: it needs to be done twice a year and one can choose to get all the required equipment, a place to store the tyres and a place to do the switch and learn how to do it. Or one can pay someone who already has the equipment, place, and knowledge to do it.*" – I4, Sales Engineer

I8 shares I1's concern about mindset being the issue hindering RPA implementation. He says that the potential key users should understand that they don't need to create anything fancy, but just a draft that does what it is supposed to – an MVP in other words. Employees' commitment to RPA and how to foster it is discussed further with RQ2, but to efficiently deploy RPA in any circumstances the people need to get involved. I1 argued that managers and employees might be too accustomed to asking someone to put together a solution for their IT problems that they don't like the idea of "*pulling up their sleeves*" and solving the task themselves. This requires a change in mindset, which can be considered a prerequisite for automation in sales support. I1 said that the approach is not only about deploying a new technology but also about digitalizing people and digitalizing teams.

The lack of trust in the output generated by RPA was mentioned by I2 and I5. Because the output of the SE process, offer and technical specification documents, are external documents and intended for customer use, the documents should be reviewed carefully (I2). I2 fears that SEs would rely on RPA output solely and accuse it of possible mistakes, even though the responsibility of the output should remain with SE always. Also, SE I5 said that he would not trust the output of the robot entirely but check it himself – which on the other hand reduces the time that could be saved with RPA. Table 12 summarizes participants' answers on prerequisites for Sales Support process automation. The prerequisites highlight things that need to change before RPA implementation can be considered.

Table 12 Interviewees' perceptions on sales support process automation prerequisites.

Prerequisites	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Better knowledge of RPA		X	X	X	X	X	X		X	

Integration of current systems to be improved				X		X	X		X	X
Mindset changed	X							X		
Increase trust towards RPA		X			X					

4.3 RQ2: How to ensure employees’ commitment to Robotic Process Automation?

As RQ1 results revealed, SEs are currently not very committed to the use of RPA. Interviewees I2, I3, and I8 named the people themselves as one of the biggest barriers hindering RPA implementation. The results of RQ2 are twofold: firstly, the current issues affecting personnel’s commitment to RPA and secondly the solutions to overcome current issues and encourage people to get involved in RPA. Table 13 gathers the opinions of the interviewees regarding current issues hindering RPA commitment.

Table 13 Issues preventing RPA use in SE currently by interviewees' perception.

Issue	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Lack of time			X	X	X	X	X	X		
Lack of RPA knowledge			X	X	X	X	X		X	
Poor training course			X	X	X	X	X		X	
Vague knowledge of the RPA support structure			X	X	X	X	X		X	

As Table 13 shows, only SEs had opinions about the current problems which is quite natural as the issues primarily concern them. The first issue, lack of time, was emphasised in many interviews as the primary constraint for RPA implementation. I8, who has been involved in the RPA implementation in other sales teams in the case company, recognizes that especially in sales people are busy and learning RPA almost invariably equals working overtime because there is no time for it within the normal working hours. I4 confirms this by saying that she already has a heavy workload and must work overtime so there is no room for RPA. I5 also states that SE work’s workload has low predictability, and it makes it difficult to allocate time for RPA as urgent projects might come in suddenly and that resets the timetables. All in all, I3, I4, I5, I6 and I7 said that they have not had the time to get familiar with RPA at a level that would enable them to design robots.

All SEs considered the lack of knowledge of RPA to be a problem for automation. There is no time to learn it and at least for the time being the need to use RPA is so rare that it would require a lot of time to recall how things are done (I4, I5, I9) and it might be too difficult to do the automation from memory (I9). The rare need for automation also raised a concern about the effectiveness of everyone learning the technology, at least I3 and I4 think it is a waste of resources. I3 highlights that having all people trained and encouraged to try and learn RPA does not draw the strength of those that are actually good with RPA instead people who are interested in learning RPA but not good at it just waste their time trying to learn which is not an effective business case.

> "*You can put people in the right place and utilize them more efficiently if you have the right people there, but just having anyone sort of fumbling around and trying to create something – it's fun, but is it the smartest business concept you can come across?*" – I3, Sales Engineer

However, encouraging anyone interested to get involved in RPA is the case company's way of working and not judging who can learn it and who not; the baseline is that everyone can learn it (UiPath 2019). The approach is dependent on the individuals interested in automation (I1, I8). I8 says that even though a lot of people have completed the basic training, only a few have moved forward and developed RPAs on their own and this point also applies to the Sales Engineering team where only one (I6) participant reported having continued to try and learn RPA after the training. The concept of learning RPA and doing the automation for themselves, however, does not appeal to the Sales Engineering team. I4 admits being sceptic towards the whole technology and the current implementation model because she didn't succeed to make a simple automation together with three other people that had freshly completed the three-day training.

All SEs have completed the internal RPA basic training offered and held by the case company's RPA team. The training didn't provide sufficient knowledge for creating RPAs and the content didn't meet the expectations. I3, I4, I7 and I9 thought that the content of the training could have been customized based on the audience needs, because now the training included examples that were not relevant for SE work (I4) and therefore the understanding of the suitable use cases and technology's limitations remained vague (I3, I7). Also, the training was considered quite difficult considering that the participants don't necessarily have any programming background (I4, I9). I3 and I4 felt that there was too much content in the training to create an understanding of how RPA works but it was more like a run-through of examples and copying what the instructor did (I4).

The last identified issue concerned vague knowledge of the RPA support structure. It is important to mention that none of the SEs said that this had prevented their RPA use, but all of them think that they would find a contact to reach for support. Most of them said that they would contact the course instructor (I5, I7 and I9). The case company, however, has a proper RPA support network and structure established and a dedicated contact person also for the sales function (Hudd, 2022). The poor knowledge of the support network for RPA is an indication of vague communication.

Interviewees' answers to tackle the above-mentioned issues and foster personnel's RPA commitment are listed below. I2, I7, and I10 were asked "How could management support employees in the RPA introduction?" because of their position in a supervisory role. From SEs (I3, I4, I5, I6 and I9) and I8, the question was formatted as "How could the organization foster your commitment to RPA implementation and usage?".

- I1: Managers could try to push automation by demanding a certain number of automations in a given time limit. Even though the number of automations is not a good KPI for RPA in the long run, it gives the process a good push which is sometimes needed at the beginning. Also, a change in mindset needs to be facilitated to shift from ordering a solution from outside the team to solving the problem themselves, within the team.
- I2: Managers could support by allocating working hours to RPA development from the daily work and by lobbying the technology to other management team members. Views this as an example of change and management's support is important in change management
- I3: Time investment for those who are interested in the technology, especially if the RPA is done in addition to the regular jobs.
- I4: A point of contact should be named, who would help and make the robots for SEs. Alter the implementation process (so the current model with citizen developers should be changed).
- I5: Not much can be done, the interest and effort must come from oneself. So, if the interest is present, then the various support methods (such as allocating work time) could help, but without motivation, there's no effect.
- I6: Reserving working hours for learning and developing RPA is a good way because the used working hours would be "paid off" later when the robots save SEs' time. Volunteers from SEs are needed to foster the implementation and support the RPA creation, volunteers being persons eager for RPA.

- I7: Management can gather RPA use ideas and present those to the RPA experts who can make feasible solutions to the problems. When enough needs are present it hopefully leads to the addition of resources to the RPA team.
- I8: The commitment requires internal motivation, and the persons decide themselves to learn or not to learn RPA. There is already a good level of support available. The RPA team has set up everything needed for RPA development including instruction videos and practical exercises to do. In sales, people are busy and RPA development is perceived as an additional role which might require work outside the normal working hours.
- I9: The training should be improved and targeted to each team if the technology should be taken into use for real. Current training doesn't provide sufficient knowledge and doesn't relate to the daily work at all which leaves the technology a bit distant.
- I10: Managers should put people to training with a very low "threshold" because the training courses offered are good and when a need is identified for RPA the training is the way to support the implementation.

The insight into this topic varies between participants, but the time allocation stands out from several answers. Time or the lack of it was named as one of the problems in RPA implementation so reserving working hours for RPA is a natural response, but that doesn't help if the person isn't motivated to work with RPA as interviewee I5 said. When asked how to inspire unmotivated people to get acquainted with RPA I10 said that key users could be identified inside the teams, or if not found within teams, then broaden the spectrum and search the department level: important is that the persons would be interested in RPA and that they know the systems and processes used in SE to some extent. Then not everyone would need to learn RPA and they could just share their automation ideas with the key user (I10). I5 agrees that with the current Citizen Developer-driven model the key user approach would be good for the SE team, but there would be problems with the unpredictability of workload if the key user would be from within the SE team.

I1 says that sometimes a little pressure from the managerial side is needed to get projects like this off the ground. He says that in the beginning demanding a number of RPAs is a good way to get people engaged in the process and start the automation journey but emphasises that volume is not a good KPI for RPAs in the long run. He also argues for a change of attitude, so that instead of outsourcing the problem to someone outside the team RPAs should be developed "in-house", by themselves. (I1) This is a challenge, because as I4 put it, “*we don’t want to do it ourselves*”. There is no clear way to change this attitude, but what managers can do is commit themselves to the technology and lead the change (I2). I1, I8, and I10 highlight the difficulty of developing RPAs centrally as for them it seems a more challenging and ineffective way of implementing RPA as the Citizen Developer approach because it would require a lot of knowledge of business rules from the RPA team. As there is no business knowledge within RPA, the business process persons would need to be involved in the development and explain the process thoroughly to the RPA developer and automating the simplest task would consume a lot of time because the RPA developer would need to learn the systems (I8, I10). I8 has tried to automate a rather simple task for another team and said that he perceives learning other people’s work as more difficult than learning RPA and it involves more people and thus wastes more people’s time (I8).

4.4 RQ3: What kind of resources are needed from the organization in the Robotic Process Automation implementation?

The answers to the RQ3 question partly relate to the answers to the RQ2. Table 14 below presents the interviewees’ answers.

Table 14 Interviewees' answers on the organization's resources in RPA implementation.

Resources	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Manager’s support	X	X					X			X
Restructure implementation process			X	X	X	X				
Improve the training course			X	X			X		X	
Organize automation brainstorming sessions			X		X				X	
Increase the RPA team’s capacity							X			
Allocate working hours for RPA development		X	X			X				
Incentivize Citizen Developers								X		

Going through the answers listed in Table 14 one by one, starting from the management’s support. All the interviewees with supervisory roles considered managers’ support important; having managers onboard (I1) and supporting the RPA initiatives is a cornerstone of the case company’s RPA approach (UiPath 2019a). I2 thinks that mid-level managers could facilitate the implementation by convincing top management of

RPA and says that also managers should attend RPA training to understand the technology and that way promote it. Importance of ensuring top management's support from early on has been recognized also in the literature (Flechsig et al., 2022). I2 sees the RPA onboarding as a sort of change management similar to I1 who argues that people's mindset needs to change to successfully implement RPA. According to Hallikainen et al. (2018), change management is an important aspect of the RPA implementation process, similar to any other IT system deployment project.

SEs I3, I4, I5 and I6 would alter the implementation process of RPA to a more centralized approach. They don't see it sensible to learn the RPA technology to such a great extent that is currently required because of a combination of both the lack of time for it and the rare need. They think that the people with the knowledge to develop the robots should be the ones responsible (I4, I6).

> "*We could explain, what we want, and they (RPA experts) could then do it (the automation) because it requires a lot of expertise anyhow.*" – I4, Sales Engineer

I3, I5, I6 and I9 admit that some level of shared responsibility is good because the people within the teams know how the process or task is done. I5 highlights anyway that no one can learn and maintain knowledge of a tool or technology if one is not using it on a routine basis. He says that the person with the idea, often being a business process person, should be brought together with a person who knows how to automate it. The RPA literates could then act as a filter and evaluate the feasibility of the idea (I5). This is, however, what the RPA team wants to avoid. I1 says that the privilege of the current model is that there is no "funnel" structure for filtering good ideas from the bad because that doesn't encourage people to continue their journey with RPA. Even though the first automation ideas are not always good automation practices, working with those educates the people involved and enables them to do better automations later – so it is considered part of the learning curve. If the first ideas were shot down, it would probably kill the motivation and these people would not do the second automation and then the potential good automation ideas emerging later would be also lost. Even small automations are implemented to encourage people in their automation journey. (I1)

> "*This one is more about the people – digitalizing people, that's what this is.*" – I1, Manager, RPA team

This is in essence what I3 called a poor business practice – having everyone trying even though there is no guarantee that they'll be successful. Instead, I3 sees two possible avenues in how the RPA process could be organized. The first option is that RPA experts would be integrated into the teams and these persons would know both RPA and the business process well and deploy the robot based on employees' needs. That would require hiring someone with an appropriate skillset or investing in training a current employee. Another option would be to have a contact in each team to gather ideas and pass them on to the central RPA team. This way not everyone needs to get involved with RPA, but this one point of contact would gather the ideas and explain the process and systems to the RPA team. (I3) I5 utters that the challenge with these approaches is how to handle the workload so that neither responsibility is neglected; the predictability of SE workload is poor and thus it is difficult to reserve working hours to RPA. I9 thinks that the current model is good in the big picture but admits that not very complicated tasks can be automated by oneself because the knowledge is not sufficient. He is also concerned that if one day an idea comes of a task that should be automated and it has been a long time since the training, the "hurdle" to start the automation job is quite big or even impossible to cross. All the interviewed managers (I1, I2, I8 & I10) and team leader (I7) consider the current model the best possible for the reasons already mentioned in the text – the knowledge of business processes lies within the teams and that is hard to transfer to people outside the team.

Thirdly, the provided training courses could be improved in the opinion of I3, I4, I7 and I9. All four think that the examples used in the training could be more targeted to the audience's needs. I4 thinks that the training was too long and contained a lot of things that are useless in SE work. She says that just a short, half-day introduction would be enough to explain what RPA is about and who to contact with the RPA needs. I7 on the other hand thinks that the training was quite short and didn't provide sufficient knowledge to perform the automation. I9 says the course should be customed directly to SEs' needs and the trainer could maybe plan the course together with the team manager by going through the systems and tasks so that the content would match with the work. Alternatively, the SEs could explain what they do, and the expert or trainer could recognize steps with automation potential and take those as examples to the training. Also, I9 thought that the training could start from an even more basic level, "RPA for dummies" -type, where the teaching would start from the ultimate basics.

I3 thinks that the most difficult part of automation is to come up with ideas and I5 and I9's thoughts about getting blind to their own job routines reinforce it. They all agree that an outsider would more probably spot the steps in the process with potential for automation and I3 suggested having workshops or brainstorming sessions to gather ideas. These sessions would involve the SE team obviously but also externals, for example, members of close stakeholders to broaden the spectrum of insights (I3). I1 and I8 described examples where an idea for automation had emerged from envying another team having something automated and that had acted as a push for automation in that team. I7 wishes that references of robots currently in operation in the case company could be shared and that could also inspire the RPA brainstorming in SE. I8 says that all the robots in use currently are an "internal" open source -type so employees have access to the codes, and it is encouraged to check the already available robots when an automation need emerges and utilize the existing base when possible.

I7 is concerned about the capacity of the RPA team; he argues that if the wish is to expand the use of RPA in the case company, then more resources are needed in the RPA team. I2, I3 and I6 consider time investment in form of working hour allocation for RPA learning and development as a feasible way to support the implementation process. I2 proposes that the automation could be done in so-called "sprints" so that an individual or a small team dedicates to automation, for example, for a week and concentrates only on developing the automation and the regular job is passed to someone else for that time. He sees it as an effective way to get RPAs faster into production. (I2) I8 says that becoming a Citizen Developer could be incentivized somehow because these employees are doing RPA on top of their regular job "for free", purely out of curiosity and interest. He says that so far, no extra resources, such as monetary rewards, time allocation or new recruitments have been used in RPA implementation elsewhere in sales.

4.5 RQ4: How to prioritize the task to be automated?

The interview question related to RQ4 had a similar phrasing as the research question itself: "*On what basis the order of tasks to be automated should be chosen?*". This question was asked of all participants regardless of their backgrounds. Table 15 gathers the answers from interviews.

Table 15 Interviewees' answers about the basis of automation prioritization.

Basis	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Simplicity	X		X					X	X	
Time-saving		X		X		X	X			
The greatest impact in terms of benefits/savings		X	X	X		X			X	X
"First come – first served"	(X)		(X)		X					

First, I1 and I8 emphasize the importance of starting automation with a simple, small task. I1 claims that if a need for prioritization exists then there is already a problem and the tasks under consideration are probably too complex to start with. Starting with too complex projects kills the motivation for automation because the knowledge doesn't yet exist. Knowledge is built through the automation of small tasks, also called low-hanging fruits. (I1)

> "*Start small. Very small automation that your colleagues and you could use and then you go for bigger and bigger because we've seen it many times that people start with that big project and they don't get anywhere and get fed up, it doesn't work, (people) get angry and throw the automation out the door. [- -] Start with the low-hanging fruit, even though it doesn't save much time*."- I1, Manager, RPA team

I1 and I8 highlight the importance of starting small in terms of building people's confidence with automation. Small automations don't necessarily create much savings, but those are a vital boost for the Citizen Developer's confidence and plant the seed for greater automations with a bigger impact in the future. Starting with complex projects that could bring in a lot of savings usually leads to frustration when the person can't create what he intended to and discourages him to continue with automation. (I8) I3 and 9 agree that starting with simple tasks is a good way forward. I9 uses an analogy of the assembly line where the automation also starts from the simplest and easiest steps. He says that in SE work there are "nonsense" steps that are small and automating them wouldn't save a significant amount of time for a single employee, but cumulatively the saved time would be significant.

However, I9 pointed out that often the decision of implementing new technology is made based on the potential savings in time and thus in costs. The second identified basis for prioritization is time savings. I4 notes that saving time with automation would free up time for other, more important tasks. I10 agrees that SE work tends to have numerous repetitive tasks that consume time, and that time could be used for more valuable work. He says that the biggest impact should be sought with automation, no matter how complex the task or the automation is. I2 also saw that automation could not only save the time of the experienced employees but also help to onboard new employees if some of the repetitive, "low-value" tasks could be automated. I7 considers time the number one priority, and the prioritization should be done accordingly.

Third, many of the interviewees named benefits just generally as the primary basis for automation. Time-saving was an individual benefit that stood out of the crowd, but, for instance, I10 said that the biggest benefit can be also improved quality and accuracy or something else; no matter what it is it should be at the top of the prioritization list. I9 notes that often the benefits are measured in cost savings and therefore when deciding where the automation should start calculations that show the saved time and the following cost savings should be made. To justify automation the following benefits should be measurable to enable comparison, for instance, the time to perform a task manually versus the time it takes for a robot to perform the same task (Hallikainen et al., 2018). Saved time and cost and improved accuracy and quality are benefits acknowledged also in prior literature (Asatiani & Penttinen, 2016; Cooper et al., 2019; Januszewski et al., 2021). I1 adds that safety improvements can also be achieved in terms of data and human safety which has also been identified in the literature (Januszewski et al., 2021).

I5 doesn't see the need for prioritization, but automation should just start with whatever idea comes first.

> "*The automation ideas should be implemented in the order they emerge, no matter how simple or complex the tasks are.*" – I5, Sales Engineer

I1 and I3 did not directly state this, but they also think it is important just to start somewhere. I1 said that if there is a need for prioritization, then the process is going in the wrong direction. He stresses the mentality of "*just doing it*", RPA is only to be learned by doing (I1). I3 is on the same page in this matter.

> "*It might be a good way to start just the first time, try this small issue and then see how RPA works for that process and then, you know, lessons learned and then you jump on a bigger project. - - then you can categorize the issues and look at what are the most meaningful possibilities to have fixed up.*" – I3, Sales Engineer

After having a pilot with simpler tasks I3 would then seek the biggest impact and automate tasks based on that. So, starting simple is recommended by the RPA literates I1 and I8 but at the same time they encourage getting started with automation – an approach proposed by I5 to just start with whatever comes up first is a good philosophy. Gaining experience and moments of success are important in an individual's RPA journey and that's what I1 and I8 want to highlight with the low-hanging fruit approach.

5. KEY FINDINGS AND ANALYSIS

This chapter presents the key findings of the empirical study in relation to what is known based on the literature review in the theory chapter. The findings are discussed in respect of the four research questions, each in a separate subchapter. This study and the research questions were designed to answer and fulfil identified lacks in the existing literature and publications. Research on RPA implementation and use in sales is almost non-existent which is partly explained by the low automation rate of sales tasks (Bangia et al. 2020). The available scientific publications cover RPA implementation and use cases well in areas of finance (Asatiani & Penttinen, 2016; Kokina & Blanchette, 2019), auditing (Eulerich et al., 2022; Moffitt et al., 2018), and customer service (Lacity & Willcocks, 2016b) and the research is emerging in areas of supply chain management and purchasing (Flechsig et al., 2022). The research on the automation of sales is mainly focused on sales force automation which again focuses on automating customer-facing activities, such as placing orders (Thaichon et al., 2018).

This research's focus is on sales support and sales engineering which seem to be niche areas in overall sales research. Studies about automation in sales engineering were not found and therefore the research questions of this study explore the fundamentalists for automation implementation in sales: what the prerequisites for implementation are, how to ensure that employees are onboard and committed to it, what it takes from an organization to pull an implementation project through and what should be prioritized. The literature review showed that the above-mentioned questions have not been explicitly answered even in the areas that are extensively researched in the field of RPA implementation and foremost there are no explicit RPA implementation frameworks presented to the author's knowledge. These lacks in the current research justify the aim of this study.

5.1 Prerequisites for automation

A challenge in determining the prerequisites for automation was the employees' lack of knowledge about RPA's limitations and requirements. Interviewees I2 – I7 and I9 worked in sales engineering and had a similar understanding of the technology. I1, I8 and I10 worked either directly with RPA or had utilized RPA in their work to some extent and therefore knew the technology well. This was also reflected in the responses: I1 and I18, who work in the RPA support unit, named mindset change as the first challenge to come across whilst SEs didn't mention that as a prerequisite. Literature acknowledges employees' fear of RPA threatening their jobs, either by weakening their positions (Gotthardt et al., 2020) or entirely replacing them (Asatiani & Penttinen, 2016). However, I1 claims that in the case company, employees are not afraid of robots taking over their jobs or by any means threatened by RPA, but on the contrary, they "*cherish the one who can reduce their repetitive, boring work*". This statement is supported by the interview results as no one said that they are negative about RPA, but all the SEs said they have a positive outlook on the technology and its possibilities to reduce manual work. However, doubts about RPAs functionality in SE work were raised in the interviews which was reflected, among other things, in the low number of automation ideas SEs came up with in the interviews. For example, I4 and I5 said that they had tried to think of automation possibilities but thought that RPA is not useful in any task currently (I4) or that they don't know exactly what RPA is capable of and thus cannot come up with ideas, but with the perception they have of it they think that is not useful in SE job (I5).

The lack of knowledge was named as a constraint for automation by the SEs and therefore ensuring that employees have sufficient knowledge of the technology is important for successful implementation. The importance of training and education in new technology implementation is widely acknowledged (Becker, 2010; Joshi, 1991) and training is also viewed as a means to manage user perceptions about the technology and how laborious its implementation is perceived (Joshi, 1991). All the interviewed SEs had participated in an RPA training covering the basics of automation, so training and support are available at the case company. After the training, none of the SEs continued to explore RPA in long run but tried some automation right after the training or did nothing at all because there had been no time. I8 admits that employees in sales tend to be busy and time is the number one limit for them therefore their RPA learning would most likely happen outside office hours.

Griffith and Northcraft (1996) claim that the form of training influences the success of technology use. They say that if employees are provided dedicated time to learn a technology and are exposed to a positively biased description of the technology, they will be more successful in the use of technology compared to employees who must learn the technology on-the-job. It could be interpreted from the answers of SEs that they are currently expected to learn the technology while completing normal work tasks which might partly explain why the use of RPA has not taken off. However, as I5 put it, even though time would be dedicated to learning RPA it doesn't have the desired outcome if the employees are not interested or motivated. In the author's impression that's the key issue in the entire RPA implementation scene at the case company and affects all the factors researched in this study which is why the issue is discussed extensively. The lack of motivation is acknowledged in the RPA team as well and I1 and I10 admit that it is a difficult issue to solve.

The lack of motivation is not a new thing in the research of change management and new technology implementation. Actions to impact individuals' perception of change are varied, but a consensus prevails across theories and models that the perceived usefulness and ease of use are the two main factors influencing the perception of technology and thus user behaviour. Based on the number of automation ideas expressed in the interviews the SEs didn't seem to consider RPA very useful in their job, so the job relevance can be considered low which affects the perceived usefulness negatively (Wewerka et al., 2020). However, all of them considered the introduction of RPA a good idea as it could realise benefits in terms of time savings and better accuracy. So, SEs do not resist RPA implementation per se, but the motivation appears not to be strong enough to support voluntary use.

In the context of the case company, the entire use and implementation of RPA are depended on the users: they should identify the use cases themselves, create the automation design and make sure that the automation is updated when a change in the automated task occurs. The use of RPA is not mandatory, at least not in the SE team, so many of the suggestions in the literature are not applicable as such because largely the research focuses on cases where the introduction of new technology or a change comes from the top and the employees are forced to adapt to it. In a setting where the use of technology is up to users the importance of convincing the users of the benefits of the new technology increases. If RPA doesn't bring in real benefits there is no reason for employees to learn to use it, which is why any use case of RPA should be evaluated with utmost care according to Wewerka et al. (2020). In the case company, this is a challenge as the users should spot the automation possibilities themselves and the RPA team doesn't take a stance on it before the preliminary automation design is made and then the RPA team assesses the feasibility of the automation before deployment (I1).

The literature doesn't recognize the user-driven policy which is in use in the case company and the suggestions to address the lack of motivation do not consider the voluntariness of use. Wewerka et al. (2020) discovered in their RPA user acceptance study that user involvement in the design and testing of RPA did not affect the perceived usefulness of technology. This statement is contradicting the approach used in the case company, but again Wewerka et al. (2020) consider mandatory and not voluntary use in their study. I1 agrees that eager people are the enablers of RPA implementation in the case company and SE I6 confirms this by stating that the SE team needs eager volunteers to foster the RPA introduction to the SE team. From the SEs in the sample group, no one admitted being one of these eager SEs and assuming that there are no such persons among the SEs not interviewed in this study either, it leaves an issue of how the RPA implementation should take off in sales engineering with the case company's current RPA approach.

Many of the SEs (I3 – I6) think that the user-driven implementation approach should be altered and don't see it reasonable for everyone to learn it but instead train the people with skills (I3) to do it or simply leverage the RPA team to design the automation based on SEs wishes (I4, I5). However, the implementation approach of the case company is unlikely to change because it has worked effectively in other departments, and the RPA team can't learn the business practices of the teams which are necessary for designing the automations (I1). I10 suggests having one key user outside the SE team, for instance, at a business unit level, which would allow outsourcing the responsibility of designing automations from the SEs. This would require that the key user is familiar enough with the tasks of the job of the SEs.

Addressing the lack of motivation, which can be viewed as a change of mindset, is the primary prerequisite for the automation of tasks in sales engineering. This would probably help with the issue of lacking knowledge: motivated people would start utilizing the education material and attend training provided by the case company. I8 claimed that the case company already have a comprehensive package of exercises and information about RPA gathered in one, easily accessible place online, so it is up to the employees to utilize it. Other prerequisites found in the empirical study are well addressed in the literature and these are gathered in below Figure 17.

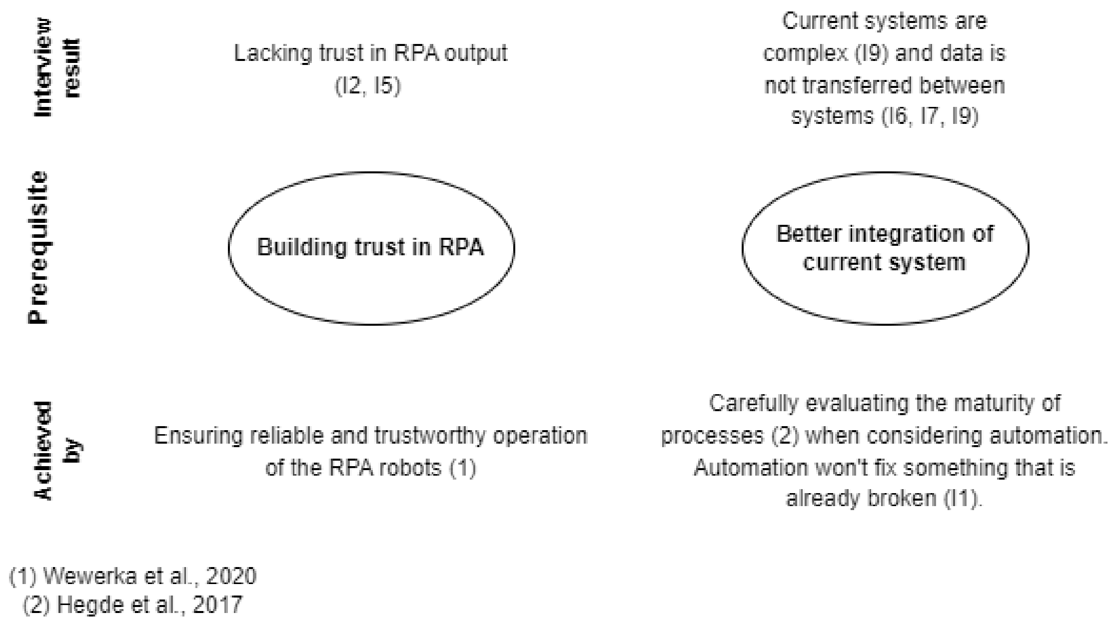


Figure 17 Prerequisites for RPA implementation and how these prerequisites are achieved.

Trust does not have a significant effect on the perceived ease of use (Wewerka et al., 2020) and only two of the interviewees indicated that they would not trust the output of RPA entirely: I2, in a supervisory role of his, said that he would be afraid of employees forgetting that they are ultimately responsible of their job outcome even if RPA is performing some part of it. Both I2 and I5 said that they could overcome this fear if the reliability of RPA is proven in the long run, which is also the recommended action in the literature (Wewerka et al., 2020).

The last of the prerequisites considers the integration of current systems which is not in the desired state now and especially data is not transferred accurately between the systems, but the user must fill in the same inputs in many systems (I6, I9). Interviewees were not unanimous about the means to improve the integration: I9 claimed that the current systems are partly very complex and old-fashioned and implementing RPA on top of that could make things even more complicated and I6 argue that the systems are updating all the time which makes the automation design and maintenance laborious. At the same time, I7 thinks that the current systems work as smoothly as possible, and RPA is the only technology that can improve the systems further. The status of the processes should be evaluated before RPA implementation is considered for two reasons: to figure out whether the processes should be improved using other means than RPA and to better understand the processes because knowing the processes eases up the task evaluation in terms of automation. The evaluation criteria – number of exceptions, rules-based and complexity – are easier to assess when the process is well-known. Understanding the processes is one of the suggestions made by I1 to avoid failures in RPA adoption.

A summary of the main findings regarding automation prerequisites in sales support:

- Employees’ (so SEs’) lack of knowledge about RPA needs to be addressed to implement RPA. Employees’ time could be dedicated to learning RPA.
- However, the attempts to improve employees’ knowledge about RPA are wasted if the employees are not motivated. Lack of motivation seemed to be the core issue prohibiting RPA implementation thus improving employees' motivation is a priority prerequisite for automation.
- Because the use of RPA is based on voluntariness at the case company, the benefits of RPA should be significant to convince employees to use it. Assigning a key user either at a team or business unit level to support automation is worth considering.
- The trustworthy operation of RPA should be ensured in the long run.
- Before implementing RPA, the maturity of the processes should be evaluated as automation should not be applied to processes that don’t work as intended or the workflow is not known.

5.2 Employee commitment to Robotic Process Automation

This topic was approached in a reverse way and the SEs were asked if they had continued using RPA after attending the training or not and as already stated above none of them had substantially continued using RPA. When asked to give reasons why they hadn’t done that they all named the same reasons which were lack of time and knowledge of RPA, poor training course and uncertainty of where to get help or support with RPA-related issues. The first two, lack of time and knowledge, were covered in-depth in the previous chapter and as said they affect all the RPA implementation dimensions covered in this study. Of the latter two reasons, the quality of the training course evoked plenty of complaints in the interviews. Both the content and level of difficulty were criticised, the bottom line being that content was mostly irrelevant for SEs and the examples were not relatable therefore the understanding of RPA remained thin.

The importance of training and other facilitating conditions, which cover the availability of all support means, have been widely acknowledged in the literature (Becker, 2010; Joshi, 1991) and those are considered the most influential variable of RPA user acceptance and a key success factor of RPA projects (Wewerka et al., 2020). However, Venkatesh et al. (2003) claim that facilitating conditions only have an impact on older workers with increasing experience and otherwise facilitating conditions do not play a significant role in technology user acceptance. The interviewed SEs have exceptionally long experience from the company and the job of SE, all except I3 being employed in the same SE position for over 10 years. From that can be concluded that none of them, except for I3, are in the early days of their careers. For them, the facilitating conditions appear to be important which supports the theory of Venkatesh et al. (2003). In Becker's (2010) study about unlearning during new technology implementation, the respondents had on average over 10 years of experience in the company and current type of job. She found also that provided training and support were considered to have a significant effect on the success of unlearning and the respondents were generally happy with the training they've been offered because it could be readily applied to work (Becker, 2010). This seemed not to be how the training was perceived by SEs. A possibility for the case company would be to evaluate the alternative of offering customized training as was suggested by one of the interviewees (I9). Noteworthy is that I10, who works in the same business unit with SEs but has a strong IT background, thinks that the training courses are good. In the interviews, some interviewees (e.g., I4) noted that it might be difficult for RPA people and IT literates to put themselves in the position of complete novices and design the training to be easy enough.

Interestingly, even though the training was criticised by many in the interviews the suggestions to improve employees' commitment to RPA mostly concerned time investments that should be made to facilitate learning as shown in below Table 16.

Table 16 Interviewees' suggestions to improve employees' RPA commitment.

Suggestion to improve RPA commitment	**Supported by**
Management to establish KPIs to push for automation	1
Allocation of working hours	3
Alter implementation process	1
Management to gather ideas and present those to the RPA team	1
Customized training	1
Managers should put people to training with a low threshold	1
Nothing to be done if a person is not motivated by RPA	2

Table 16 gathers ideas that were brought up when interviewees were directly asked to think of ways how management or organization could foster their commitment to the technology. There was no clear consensus on the means, but the opinions were divided. The only two suggestions mentioned by more than one interviewee were the allocation of working hours and the suggestion of doing nothing. Allocating working hours to learn RPA is supported by Griffith and Northcraft (1996) who claim that free training results in better outcomes than on-the-job learning. However, two of the interviewees, I5 and I8, said that if the person doesn't have the motivation to learn RPA, then not any of the available support methods, like the above-mentioned work time allocation, will make him or her committed to using it. I8 claims that there are already functioning support means available for employees, including training materials and a support network. I3, who supports the idea of allocating working hours to learn RPA, specified that the time allocation should be given to the ones interested in the technology. Also, the issue of commitment appears to come down to individuals' interest in RPA. As I1 put it, people can't be delegated to do RPA, but the motivation has to come from oneself.

The RPA implementation process itself evoked criticism from many SEs even though it was suggested as a means to improve commitment by only one. The model of having the businesspeople responsible for making the preliminary automation designs was not seen as reasonable, primarily because it is not effective to have everyone trained with skills that are rarely needed (I4, I5) and train people that have no realistic chances to acquire sufficient skills (I3). When asked if they would improve the implementation somehow, I3, I4, I5, and I6 suggested that the responsibility of the automation design should be with the RPA team and only ideas should come from the business units. SEs I7 and I9 and director I2 thought that the current model of shared responsibility is a good basis, however, I9 is afraid that automation ideas might end up never being put into practice because one's skills and knowledge are not sufficient to make even the preliminary automation designs, especially a long time after the training.

The RPA literates I1, I8 and I10 thought that the current model is the best one available and said that a centralized model where the RPA team would be responsible for making the automations from scratch for the teams is not feasible because they can't learn the business practices so in detail as what is required to create automations. The differences in interviewees' backgrounds clearly have an impact on the way how the implementation process is perceived. For SEs that do not think the current model is the best one available the reasoning seems to be primarily the rareness of need. I3 argues that it is not a good business practice to have everyone "*playing around*" in the system instead only a few people should get acquainted. An advantage here would be that then these few persons would also automate the ideas of others and work with RPA on a more regular basis and thus maintain their skills.

The rest of the suggestions in Table 16 are from the interviewees with a supervisory role. Using KPIs, such as a number of automations, is often a good way to kick-start the automation work in a team (I1). This would make the use of technology mandatory and act as an incentive to learn and use RPA. As Jurek et al. (2021) claim in their study, in private setting people try out new technologies and abandon them if they're not pleasing but at work that is rarely possible because the use of a system is usually mandatory. In the case company, the use of RPA has not been mandatory so far and other incentives, such as the benefits compared to the current way of working, are not significant enough or not communicated well enough to incentive the implementation, so taking in KPIs could help. However, managers should be careful with the KPIs, in the long run, to make sure that they measure the right things, because, for instance, the number of automations is not a feasible KPI in the long run (I1).

The other suggestions, management to gather ideas of automations and training people with low threshold, are contradicting the prevailing facts and other findings of the study. First, gathering ideas for automations to present them to the RPA team is not likely to increase commitment because the RPA team is not going to do anything with the ideas in the current setting. However, gathering the automation ideas to keep the brainstorming ongoing in the team can be effective and it keeps the topic on the table. It also shows the line manager's commitment which is an effective way to engage employees in the change and avoid the impression of the implementation being just a "management fad" (Becker, 2010). Putting people to training at a low threshold is not likely to increase commitment either because the employees do not consider the training courses useful in their current form.

A summary of the main findings about factors increasing employee commitment:

- Facilitating conditions have a great influence on how the technology is perceived by users with long experience in the same job: if training and other support means are considered good it will positively influence how the technology is perceived. Except for one, all the SEs have worked in the same position for many years, and they did not consider the provided training course sufficient; therefore, improving the training course could have a positive impact on employee commitment.
- Time allocation for those who are interested in RPA was suggested to increase RPA commitment. Again, if there is no motivation, time allocation won't help.
- Depending on the participants' backgrounds, altering the RPA implementation process by shifting the responsibility of creating RPAs to the RPA team was considered to improve employee commitment. Those participants who knew RPA

better disagreed and considered the current implementation approach to be the best practice for the case company.

- The use of KPIs at the beginning of RPA implementation could help to incentive the use of RPA and thus kickoff the implementation process.

5.3 Required organizational resources

As discussed in the theory, organizations only change and act through their employees (George & Jones, 2001) and it’s their responsibility to support their individuals in the changes, usually through various resources. Becker (2010) and Venkatesh et al. (2003) highlight the influence of individual characteristics in the way change is perceived, e.g., perceived stress, and what means are effective to achieve the desired outcome. The way how people react to new technology is affected by their previous experiences with technology (Jurek et al., 2021) and demographics, age and gender being the primary moderators of technology acceptance (Venkatesh et al., 2003). Sales research recognizes that the human factor is usually the reason why digital transformation initiatives fail (Alavi & Habel, 2021) or progress slowly in sales (Mattila et al., 2021). Alavi & Habel (2021) suggest that salespeople generally welcome new technologies but they have doubts about how the technologies will affect, for instance, job autonomy. The interviewed SEs in this study didn’t seem to have such fear but rather the author was left with the impression that the SEs feel that RPA would cause them more work.

According to the equity-implementation model, individuals evaluate the technology through three social dimensions, one of which is the benefit for the user him- or herself from using or not using the technology (Joshi, 1991) so comparison with current and the new. So, an effort in providing the SEs with information highlighting the benefits of RPA or even positively biased info (Griffith & Northcraft, 1996) would probably help in changing the perception of RPA from tedious to useful. However, if Levine (2007, p. 20) is to be believed there are two types of SEs, ones that welcome change and those who just surrender to it, the latter group representing most of the SEs. This suggests that no matter what is done to support the individuals, it only helps to a certain extent and the rest is up to the individuals themselves – similar to what I1, I5 and I8 argued about the role of motivation in the effectiveness of support means. Nevertheless, Mattila et al. (2021) claim that problems regarding unwilling individuals can be solved with managerial practices. Also, resources, such as new capabilities (Vial, 2019) and financial inputs (Wengler et al., 2021) are needed and these were also reflected in the answers of the interviewees.

As in the previous topics, also this topic showed that the interviewee's background affects the way how the topic is looked at. Interviewees with similar backgrounds seemed to give similar answers to the questions regarding organizational resources required in change management. Interviewees in a supervisory position said that ensuring managerial support is important and that was the only “resource” named by all managers. The SEs didn’t mention managerial support at all, even though social influence (including both managerial and peer support) is considered an important reinforcing factor in the early stages of new technology use (Venkatesh et al., 2003). However, the moderating effect of social influence on behavioural intentions is stronger for women, and older workers, with limited experience under conditions of mandatory use (Venkatesh et al., 2003). All except one of the participants were men who are then less affected by social influence according to Venkatesh et al. (2003). The age of the participants was not asked and neither did Venkatesh et al. (2003) determine the age after which an employee is considered “older”, so the effect of that variable is hard to evaluate. The use of RPA is not mandatory, or at least the author was left with the impression that the participants didn’t feel that they’ve ordered to take RPA into use but rather it is up to the individuals themselves to get acquainted with it or not. SEs' experience with RPA is limited, but that being the only condition met it supports the theory of Venkatesh et al. (2003) of social influence not having a strong impact on behavioural intensions of characters that the interviewed SEs represent and thus understandable that they didn’t take that up in the interviews.

When managerial support was not seen as a necessary resource by SEs in the RPA implementation, they stressed the need for improving the training course, restructuring the implementation process and allocating working hours for RPA development all of which have been discussed already. An idea brought up by three SEs was to facilitate brainstorming sessions where automation ideas would be gathered. The suggestion included having people outside of the core SE team involved to get more insights and tackle the problem of SEs being so routinised in their jobs that they fail to spot some of the automation opportunities. I3 said that the hardest part of the implementation is to get the ideas and this statement is supported by the low number of automation ideas the SEs came up with.

The RPA literature is unanimous in the definition of a task suitable for RPA automation and the task evaluation is covered extensively. To the author’s knowledge, the challenge of identifying potential tasks in the first place is not covered in the literature. Fernandez and Aman (2021) and Siderska (2020) admit that identifying suitable processes for automation requires skills and the correct approach, but they do not address the issue further. Otherwise, the assumption seems to be that there is an abundant number of tasks in line to be automated. In the case company's SE team, the situation appears to be on the contrary and the automation candidates are almost non-existent. I1 admitted that in some jobs there are inherently more opportunities for automation, but in every job, there are tasks that could be automated, and this is supported by the statements about the automation potential in sales (Bangia et al., 2020). So, on that basis, there should be tasks and processes to be automated also in sales support.

Some of the SEs (for instance, I5 and I7) admitted that a better knowledge of RPA's suitability and capabilities would help to figure out the automation possibilities as well and that argument is probably in the essence of the issue. Thus, organizing RPA brainstorming workshops is a good idea and possibly a recap of the possibilities and limitations of RPA could be included to get everyone on the same page. I7 and I9 were longing for practical examples to make the technology more relatable, so that could be considered. Direct scientific support for this suggestion is hard to find because the RPA literature emphasizes the importance of selecting the right tasks for automation, not how to find the automation possibilities in the first place; nonetheless, communication and education are proven to be efficient ways to prevent resistance from forming (Wewerka et al., 2020) and workshops are usually informal in nature and informal support is known to make the facing of changes easier (Becker, 2010; Lee et al., 2010) so brainstorming sessions would most likely help the SEs in the RPA implementation anyhow.

Two suggestions both of which were mentioned by only one interviewee included monetary input. I7 suggested that new employees should be hired for the RPA team because he thinks the current capacity of the team is too small if the RPA use is wished to be expanded. I7 also suggested managers gather ideas and present those to the RPA team as a means to support employee commitment, but that contradicts the current operating protocol of RPA within the case company. I1 as head of the RPA team implicated clearly that there is no plan to alter the operating principle in the direction of a more centralized model but instead the case company is proud of the current, a bit extraordinary approach to the RPA implementation. Thus, there is no reason to support the suggestion of increasing the RPA team's capacity through new recruitment to support the SEs in the RPA introduction, but surely at some point if the RPA use expands there is a need to enlarge the base of RPA experts to maintain the support network.

I8 suggest that becoming a Citizen Developer should be incentivised, for instance with monetary compensation, especially in sales because people are already busy if not even overloaded with work. Monetary compensation is not brought up as a motivation factor in RPA literature but in the research of new technology implementation, the use of financial rewards is acknowledged as a stimulator to co-operate to achieve common targets

(Björkman et al., 2004). Extra compensation was not suggested by any of the SEs which could imply that a reward isn't the key motivator alone but as one of the incentives it could work. When the negative responses to RPA were discussed with I1 he said that RPA is not a task to be delegated but a person can be hired for that. A possibility for the case company to foster the implementation and long-term commitment could be to recruit a new employee to take care of it or if new recruitment is out of the question, then I10's suggestion of having a common RPA key user for the whole business unit is worth considering.

A summary of the main findings regarding the organizational resources required in the implementation:

- Efforts to change employees' perception of RPA from tedious to useful should be made, however, if the lack of motivation is not addressed it will not help.
- Participants with supervisory roles considered management support a key resource for supporting RPA implementation. The employees didn't consider managerial support important and that is supported by theoretical findings.
- Identification of potential tasks to be automated was considered difficult by the participants. Cross-team brainstorming sessions could help to come up with automation ideas and to make RPA more approachable.
- The option of recruiting a person to take care of RPA in the team should be assessed: the person would have the motivation for RPA which lacks in the current employees.

5.4 Prioritization of automation

The literature review revealed that there is no common understanding of how the tasks should be prioritized and only one publication was found with criteria for prioritization (Beetz & Riedl, 2019). A few studies agreed that a feasible task to start RPA automation is both low-complex and low-risk as it minimizes the risk associated with automation (Carden et al., 2019; Flechsig et al., 2022; Syed et al., 2020). Simplicity was one of the criteria mentioned in the interviews. The reasoning was not nevertheless the mitigation of risks but to prevent people from starting with something complex and failing which almost inevitably leads to abandoning RPA (I1). I1 stressed many times that RPA is part of a greater aim to digitalize people and teams and that's why it is important to encourage people to get acquainted with RPA – and a too-complex task to start with is not appropriate. This point of view relates tightly to the approach of RPA used in the case company which wouldn't work if the individuals would not continue to use RPA and enable the spread of RPA organically within the company. I1 and I8, who both are part of the RPA support structure at the case company, highlight that starting small and gradually advancing to more complex automations is the best way in the long term and I1 even claims that if a need for prioritization arises then there are already too complex tasks on the table. The issue of identifying those tasks that are simple from an automation point of view remains which is partly explained by the fact that most of the interviewees would prioritize tasks that create the greatest benefits and those are not achieved by automating the simple tasks.

There is a clear difference in the way SEs and the RPA literates look at the prioritization issue. Interviewees involved in the RPA support view the RPA adoption and first tasks as part of the individual learning curve in their journey of becoming Citizen Developers. SEs' motivation to use RPA is based on its possibility to ease their job and they'd like to see the impacts immediately. As stated by Wewerka et al. (2020) if automation cannot be shown to result in real benefits there is no motivation for the employees to learn to use it. Taking into account that the work at sales tends to be busy (I8) it's understandable that SEs are even a bit irritated that they are expected to learn to use a new technology which generates measurable benefits only after some time if even then. So, both suggestions as the basis for prioritization are justified, but again, due to the RPA approach that is in use at the case company the prioritization according to the greatest benefit doesn't seem reasonable. As the SEs themselves expressed in the interviews they lack the knowledge of RPA to even spot the automation possibilities so it is very unlikely that they would start the automation from a complex task.

So, simplicity as the primary prioritization criterion for automation seems feasible. This must be carefully communicated to the SEs to avoid them turning RPA down because it will not benefit them enough. On the other hand, if the case company decides to utilize a centralized RPA key user for the team or hire someone to do the automations then there is no problem prioritizing the tasks according to the greatest impact if the person has sufficient knowledge of RPA and the business processes. However, then the risks must be evaluated to avoid disasters. A general guideline is to start with non-business-critical tasks but gain evidence of RPA feasibility with less critical tasks (Flechsig et al., 2022). Starting simple would be a safe way in any case. Figure 18 below summarizes the prioritization criteria in both scenarios.

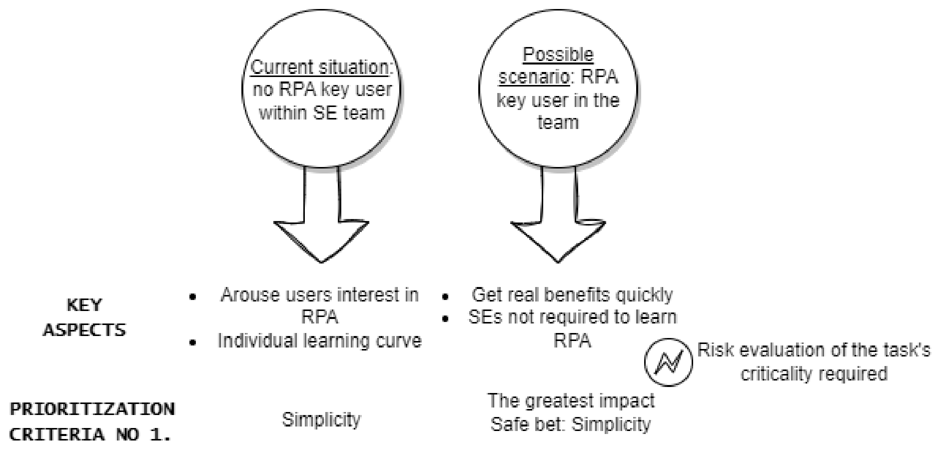


Figure 18 Prioritization criteria of the automated tasks.

Time-saving was suggested as the basis of prioritization by four (I2, I4, I6 and I7), but that can be merged into the criterion "the greatest impact" as the main benefits and impacts achieved by RPA include cost and *time savings* and reduction of manual workload (Fung, 2014; Gotthardt et al., 2020; Hofmann et al., 2020; Januszewski et al., 2021; Leshob et al., 2018; Syed et al., 2020). The last suggested prioritization criterion was formulated as "first come, first served" in the results chapter and it means that there is no need to prioritize but whatever idea comes up first should be done first. This was directly supported by I5, but also I1 and I3 indirectly suggested it as I1 says that having to prioritize in the first place implies that one has got too far in thinking of the automation ideas and possibilities and I3 said that it is important just to start somewhere. "Just do it" as a guideline to prioritize automations is good on an individual level, but if thinking on a team level it is not sustainable nor effective as it would just favour the one who ever gets an idea first. Following a clear guideline is a fair way for all. So, tasks should be prioritized based on simplicity at least in the beginning, maybe when the team's skills advance or a professional is hired to do the automation the prioritization can shift to be based on the greatest impact.

A summary of the prioritization criteria for tasks to be automated:

- Starting with the simplest tasks was one of the most proposed criteria and it is feasible because it fits the overall RPA approach in the case company and is supported by the literature.
- Participants involved in RPA at the case company consider the first automated tasks as part of an individual's RPA learning curve whilst the employees would like to see real benefits from the very first automation. Employees' points of view are to be taken into account when communicating about the priorities.

- Most of the employees would like to prioritize the tasks according to "the greatest impact". With the current RPA approach, this is not feasible, but if a new employee would be hired to take care of RPA this could be possible. Nevertheless, aiming for great benefits from the start could lead to unnecessary risks to the operation of work processes.

5.5 The framework for implementing Robotic Process Automation in Sales Engineering

A framework for implementing RPA in the case company's SE team was made to summarize the aspects and factors affecting the implementation's success throughout the implementation process. Also, the framework was formed to visualize and gather matters that have been already discovered and studied in the relevant literature. The framework changed and supplemented quite significantly from the original one presented in Figure 13 which was based entirely on literature and on a few assumptions that the author already knew from the case company's implementation process. The revised framework is presented in below Figure 19. The modifications compared to the original framework are based on the results of the empirical study which provided plenty of new information on how the RPA process is currently organized in the case company.

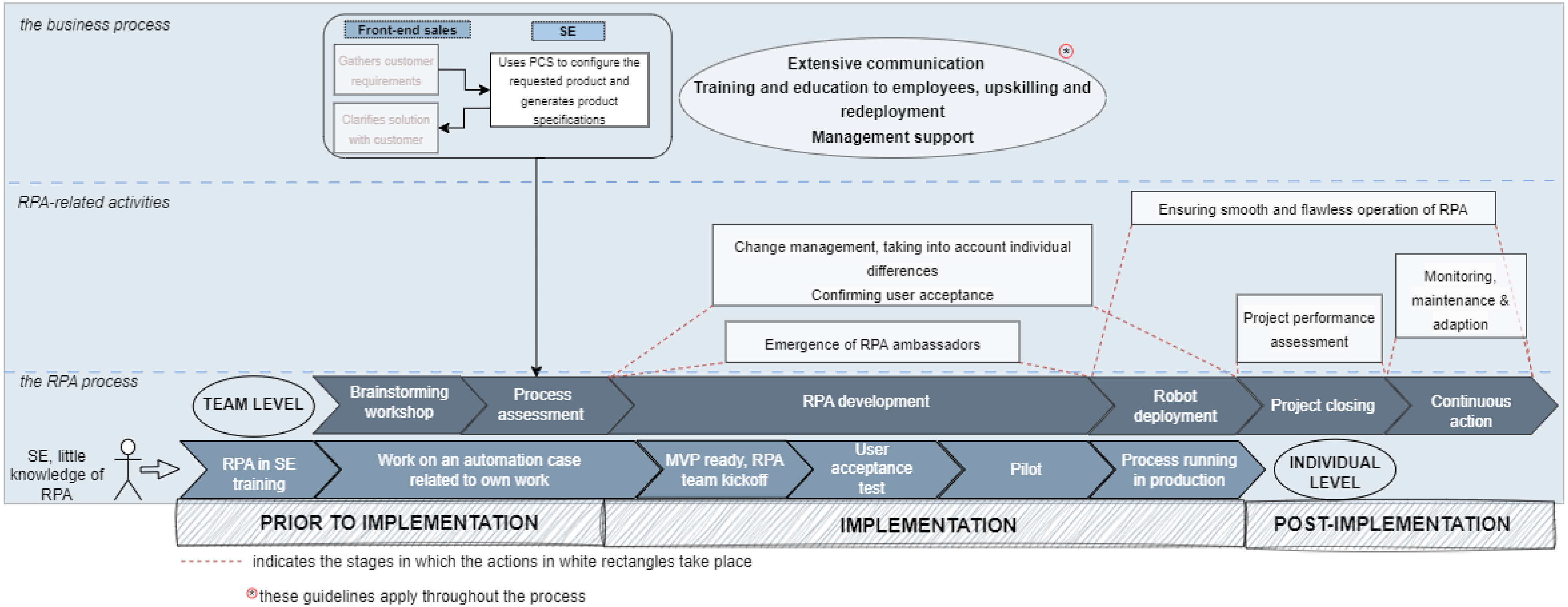


Figure 19 Framework of Robotic Process Automation implementation in Sales Engineering.

The RPA implementation in the case company is driven by individuals and the existing processes are designed to support the individual users on their RPA journey. However, the state of the will is to establish RPA on the SE team level and therefore the framework presented in Figure 19 considers both levels. The framework is designed to be effective on the prevailing conditions of the SE team where the ground assumption is that users have attended an RPA training and therefore have already some understanding of the technology. The framework starts on an individual level with training that is particularly designed for SE needs and provides examples relevant to them, for instance, the examples are from systems which are in the SEs' daily use. After the training, the process starts also at a team level by organizing a brainstorming workshop where automation ideas are discussed together. The purpose is not only to gather ideas but also to kickstart the RPA implementation process officially and make clear that the use of RPA is a common goal from now on instead of voluntary tinkering.

After or in parallel with the idea brainstorming the processes and tasks in the SE job are assessed in terms of automation maturity and the process of improving the processes where needed prior to automation is initialized. This is one of the management activities taking place in the implementation process and another important activity to take place at the beginning of the process is to decide, how the RPA responsibility is organized within SE. As stated many times already in this study, the motivation of SEs is a major challenge in the RPA implementation and if the implementation relies on the expectation that the motivation emerges at some stage it is very vulnerable to failure. To complete the implementation and ensure long-term use there should be a key user or users to support the creation and use of RPA. The framework suggests either selecting the key users within the SE team or business unit or hiring a new employee. Either way, someone must be explicitly given the RPA responsibility to prevent the scenario of RPA being forgotten and the RPA responsible(s) could actively promote RPA and thus foster the adoption of automation. Even though RPA responsibility is given to particular users everyone must attend the training and brainstorming workshops to increase their knowledge of RPA and create an impression that it is a common mission. The aim is not to outsource RPA to the key users only, but their role is to support others to make the MVPs.

Management should also set KPIs in the early stages. The suggested KPI, the number of automations in a given time (I1), would serve the purpose of kicking the automation implementation on the right track. Demanding a number of KPIs would force the employees to review their processes and tasks carefully from an automation point of view. The KPI would also in turn prevent RPA from being abandoned and forgotten and make sure that the implementation proceeds in a reasonable time; I2 mentioned that usually new technology introduction projects tend to be lengthy in the case company and RPA should make an exception in this regard, especially since short time-to-market is one of the advantages of RPA (Hegde et al., 2017).

When presumably the required number of automation ideas arise management must make sure they are prioritized according to the agreed criteria which in this case is suggested to be primarily the simplicity of the task. This criterion supports both the individual learning curve of the SEs in automation and uninterrupted operations in sales engineering as the simple task is not likely to be business critical and compromise the SE workflow. These management actions take place in the RPA development stage in team level process. Simultaneously this is a critical time in individual development as the first automations are being made and this stage mainly determines the fate of RPA: if the users get frustrated and upset with RPA, they are likely to begin to resist it. Therefore, the availability of support should be ensured, and communication should remain open throughout the process. The user acceptance stage is an important determinant of the eventual RPA use, and it should be ensured that the final design of RPA is user-friendly (Wewerka et al., 2020) and perceived as easy by the SEs.

The individual process ends in the RPA deployment, but at a team level, a project wrap-up should be made to review the results of the first deployed RPAs in terms of the achieved benefits and to hear feedback from the SEs to determine how to work with RPA from now on. Once the RPA has been established in the team the ways of working can be iteratively improved and therefore hearing SEs' opinions regularly is important. The implementation project should be also evaluated based on the KPIs set in the beginning and change the KPIs to reflect long-term targets (which should not be about the number of RPAs). This framework focuses primarily on the SE team and actions to be taken within the team, but the RPA team should be involved from the beginning. Even though they will not intervene in the automation ideas or make the preliminary designs on behalf of the SEs, they can have a consultative and supporting role also in the stages that do not directly involve them, for instance, they could join the brainstorming workshop and provide understanding on what kind of tasks are feasible for automation and what not. Anyhow, this framework assumes that the RPA team would facilitate a training session for SEs that would be more customized for their needs.

5.6 Limitations of the study

This study was designed carefully, and the possible sources of biases and errors were tried to be prevented as well as possible and the study succeeded in providing insightful results on the topic under research. Nevertheless, a critical review of the results and the way this study was conducted is in place. The limitations of this study are related to the interview design, framework, the generalisability of the results, the relevance of the study and the formulation of the research questions.

Starting from the interview design, a decision was made by the author to use three different question lists depending on the background of the interviewee. This decision was made due to the differences in interviewees' knowledge of the RPA technology and to take the most advantage of the knowledge each interviewee represented. If the same question list was to be used for all interviewees, it would either have been designed according to SEs' knowledge and background, resulting in irrelevant questions for the RPA experts or the other way around causing irrelevant and technically difficult questions for the SEs. The interview design was built upon themes which remained the same in all question lists. The questions were carefully reviewed to avoid probing or attitudinally charged questions to ensure reliable and non-biased results, but the results implicate that the wording of the questions might have prevented the interviewees from considering all relevant aspects in their answers. For instance, the SEs were asked "*How could the organization foster your commitment to RPA implementation and usage?"*, purposefully using the word "organization" instead of "managers" to broaden the scope and prevent the respondents from only thinking of their closest line manager, but as a result, some of them didn't consider the managers at all in their responses. Overall, the interview design managed to cover and answer the research questions well, but some improvements to the question phrasing could facilitate a more extensive analysis.

The framework in Figure 19 is partially based on the literature as it preserved some parts of the initial, literature-based framework in Figure 13, but mostly it is based on the results of the empirical study for a few reasons. First, the implementation process of RPA is relatively new in the literature and there is no consensus on the steps included as there are hardly any publications introducing an implementation framework for RPA. Second, there is an implementation process already in use at the case company which is unique and crafted particularly for the needs of the case company and there are no corresponding studies available which make the assessment of the framework difficult. The perspectives in theory and the case company differ, the latter focusing on individuals whilst theory focuses more on an organizational level which posed a challenge in the review of the findings against literature but on the other hand allowed the formulation of a framework that is a combination of scientifically proven steps and empirical findings. The framework is not tested or proven during the study which is a limitation.

Ideally, the framework and the results of this study could apply in the sales context generally, but the case company specifics most likely affected the generalisability of the results. The results might apply to the sales engineering context more in general, but the setting at the case company and thus the starting point of the study is not very generalisable. For instance, in this study, the SEs had already completed RPA training and had formed an opinion of the technology and that's not necessarily a generalisable reference situation from a research point of view. RPA was already in use in the case company and the issue was how to expand its use into Sales Engineering. The odds that another organization has the same situation are rather small and thus weaken the generalisability of the results. The lack of research and corresponding studies within the field of automation in sales and especially automation in sales engineering made the critical analysis of the results challenging.

The relevance of the study concerned the author from time to time during the study. The reason for this doubt emerged during the interviews as the interviewees in SE couldn't come up with many automation ideas and it raised the thought of the suitability of RPA in SE work. This doubt was empowered by the complete lack of literature in the field of RPA in Sales or Sales Support and Sales Engineering. However, the results show that there is potential for automation in Sales Engineering, but at the same time, the reasons for the lack of automation research in sales and the generally acknowledged fact of sales lagging behind other business functions in automation remain unclear.

The last identified limitation of the study is the formulation of research questions. Questions one, two and three resulted in more overlapping than expected and it was sometimes difficult to separate the answers between questions or it felt artificial. When the research questions were formed the aim was to include only one aspect per each question to ensure clarity and help to design the empirical study. A difference in the results addressing each question has been made, but not all the overlapping could be avoided. With another phrasing of the questions, this study could have provided better insights into the core issues.

6. CONCLUSIONS

RPA as its simplest is designed to take over tedious manual work from human employees and free up their time for more value-generating and motivational tasks (Madakam et al., 2019; Rutschi & Dibbern, 2020). In the sales domain where the working phase is tense and digital transformation is constantly shaking up the ways of working (Überwimmer et al., 2021) one would think that technology easing up the workload and allowing one to concentrate on relevant assignments would be welcomed with open arms, but as this study and prior literature reveal this isn't quite the case. This study's purpose was to determine, how Robotic Process Automation could be introduced in the Sales Engineering team sustainably and successfully, including the assurance that the employees are committed to using it. A lack of literature regarding the use and implementation of RPA in sales and sales support was also discovered and thus one target for the study was to contribute to the literature on that matter.

To understand the circumstances affecting RPA implementation in the sales support context the following four research questions were formed and answered: 1) What are the prerequisites for the automation of sales support processes, 2) How to ensure employees' commitment to RPA, 3) What kind of resources are needed from the organization in the RPA implementation, and 4) How to prioritize the tasks to be automated with RPA. An abductive approach to theory development was selected and thus the study started with an extensive literature review on Robotic Process Automation, sales processes, and new technology implementation. Next, data was gathered through 10 semi-structured interviews as part of the empirical study. The interviewees were employees of the case company who'd be either directly affected by the RPA implementation, are in a supervisory position to the employees affected or know how RPA is arranged in the case company. The results of the study were compared with the prior literature, and this analysis led to the main findings of this study. Based on the findings the RPA implementation framework formed at the end of the theory chapter was modified into the final form. Though the framework presents the findings in a summarized way, the main findings are explained more in detail below.

Main findings and practical implications

Not surprisingly, the lack of motivation of the employees who are the enablers of the introduction of RPA was found to be one of the fundamental issues hindering the RPA introduction. The human factor, which takes the form of resistance, for instance, and the poor management of it are the primary reasons for any change management or technology implementation project's failure (Alavi & Habel, 2021; Reynolds, 1994). The empirical study revealed that the Sales Engineers didn't resist the technology but instead had a positive outlook on it, but still, the prior initiative to take RPA into use in Sales Engineering (at the time when Sales Engineers completed the RPA training) did not take off. The conclusion of the reasons behind Sales Engineers' avoidance to use RPA comes down to two factors: lack of knowledge and dissatisfaction with the current way of working. The following two practical suggestions address these issues. The suggestions are phrased in a generalisable way because the suggestions might apply also in other sales circumstances than the one studied here.

1. *The training material and courses should be better designed to address the needs of the target audience, for instance, by using examples that relate to the job of the attendees.*
2. *A key user or a few key users for RPA should be assigned. The responsibility of the user is to support other users in the preliminary automation design or even make the preliminary automation designs upon another user's request. However, in the long run, the purpose is not that the RPA falls entirely on the shoulders of the key users, but they act as first-hand support for other users.*

The importance of training and education has been already repeated several times in this study, but the quality of the provided training matters. Many of the interviewees were longing for more customized training which would be tailored to their context and thus help them to understand the RPA better. Regarding the second suggestion of having key users, it appears to be the best solution for the time being considering the current RPA process at the case company. Having a key user would reduce the need for the SEs to learn RPA but would be compliant with the current way of working with RPA at the case company which relies on the so-called Citizen Developers. Several of the interviewed SEs claimed not to have time for learning RPA and doubted that they would not learn the technology to a sufficient extent. The key user would allow the process of RPA implementation to proceed by making the designs of the first RPAs and giving time to SEs to learn RPA and see the results of it. Hopefully, the proven benefits of the first deployed RPAs would motivate the SEs to learn RPA themselves better and then the responsibility of key users would shift more to the supportive role.

The literature doesn't acknowledge the RPA process in use at the case company. In many of the studies regarding RPA implementation (for instance, Asatiani & Penttinen,

2016) the implementation work is conducted by leveraging external consultants. The option to insource RPA where the RPA governance and development is done in-house as in the case company is acknowledged in literature (Lacity & Willcocks, 2016b), though, but how the insourcing is done is not covered in any available publications. Therefore, some of the findings have been hard to compare with the literature because corresponding literature does not exist. Another peculiarity in the case company's RPA arrangement is the voluntariness upon which the whole system is based on. The literature doesn't recognize voluntary technology implementation in an organizational context, but the adoption of a new technology is most often mandatory. In the case company, the aim is to take RPA into use in the Sales Engineering team and as it has not happened voluntarily, it is suggested to incentive and force implementation by using KPIs. The third suggestion is phrased as follows.

3. *The managers should set a KPI that will force the use of RPA, an example would be to demand a certain number of automations from the team in a given time. It's important that this type of forceful KPI is used only in the beginning and later the KPIs are altered to reflect long-term targets.*

The last practical implication is related to the prioritization of tasks to be automated. A clear prioritization criterion does not yet exist in the literature, however, a comprehensive list of features a task must fulfil to be considered for automation is available. Generally, scientific publications agree that the initial RPA implementations should be considered for tasks of low complexity and low risk (Carden et al., 2019). Also, the RPA experts of the case company suggested starting with a small, simple task as it will support the individual learning path.

4. *The first tasks for automation should be prioritized according to task simplicity. It supports both the learning of the individuals and the experience gained by the entire team. Starting with automation generating great benefits could compromise the operation of the systems if the automation fails.*

The fourth suggestion concerns only the first automation. After a few RPAs are up and running in the systems and the understanding of the suitability of RPA increases the basis for prioritization can be more on the benefits the automation could create. Because the level of knowledge of RPA in the SE team is rather low it's recommended to proceed carefully in the implementation process. The gradual implementation would also allow the assessment of RPA suitability in SE and interrupt the implementation if it turns out that RPA does not create enough benefits compared to the effort it takes or if some actions, such as system integration, are needed before a large-scale implementation is feasible. Based on this study’s result and findings the relevance of RPA in SE work cannot be judged, but there is no evidence why it wouldn’t work so it’s recommended to give it a try especially because it is already an intention.

Theoretical contributions and proposals for future research

The use of RPA in sales has not been studied before, however, the utilized secondary source implies that sales has a significant potential for automation: Bangia et al. (2020) suggest that up to 30 % of all sales-related activities could be automated. So, this study provides some insights into the sales-specific features that could affect RPA implementation. For instance, sales processes in B2B environments are in transition for two main reasons: 1) the change from selling products to selling solutions (Brady et al., 2005) and customers asking for ever more complex solutions (Singh et al., 2019) and 2) the digital transformation shaping the ways how to interact with customer and how customer place orders, for instance (Thaichon et al., 2018; Überwimmer et al., 2021). These changes shape also the role of salespeople (Ahearne & Rapp, 2010). Considering salespeople are under constant change it certainly affects the way how they react to new changes introduced on top of the existing ones.

As this study showed, the SEs were not very eager to do the automation themselves but would rather have someone do those for them (I4). The constant change also affects the processes and systems in use and causes them to change and update regularly as was pointed out in the interviews (I6). An issue that remains unclear in this study is the relevance of RPA in SE work since the SEs couldn’t name many potential tasks for automation and the literature lacks research about RPA in sales and sales support. Anyhow, the lack of literature is enough reason to study the topic more and find out about RPA suitability in sales. This study focused on Sales Engineering team in one company and therefore the results of this study cannot be generalised to apply sales overall. This study did not either take a stance on what kind of tasks could be automated in sales, so a suggestion for future research could be to study the opportunities of RPA in sales and possible benefits that could realise with it using a research design that would allow more generalisable results. A study of that kind would be most likely needed in businesses considering utilizing RPA in their sales function. It is recommended to pay attention to the formulation of research questions to ensure that all relevant aspects are covered but to avoid overlap between questions which was an issue in this study.

A contribution to theory is also made in terms of studying the sources of motivation in work-related voluntary technology use. Literature didn’t seem to recognize such phenomena but associates voluntary technology use with private life (Jurek et al., 2021).

Mandatory technology use is the prevailing norm at work, but as I1 suggested the user-driven approach to RPA is not just about learning to use RPA but increasing employees' digital capabilities in general. In the era of digitalization and digital transformation, a study about the benefits of incentivised voluntary technology use at work could be useful for managers aiming to digitalize their employees. Also, this study investigated a situation where technology has already been turned down once by the users, but the aim is to change the initial perceptions of the users, which didn't seem to be covered in prior literature. Most of the studies regarding technology implementation start from the situation where the users are exposed to it for the first time.

This study confirmed some of the findings of earlier studies, such as the importance of training and education in new technology implementation (Becker, 2010) and the interdependence of technology implementation and organizational and human factors (Mlekus et al., 2018). The study also resulted in new findings and a framework for RPA implementation in SE was formed based on literature and the empirical study, but the framework was not tested. The framework could be tested in future studies, or it could be the basis of new research. However, some of the findings and especially the framework reflects the unusual starting point of the study, where new technology implementation is studied but the technology has already been presented to the employees in a way. In upcoming research, the case and context should be carefully assessed if aiming to generalisability of results. Overall, this study's results and findings are of most use to the case company in question, but they might provide insights and ideas for further research, too.

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APPENDIX A: INTERVIEW DESIGN AND QUESTIONS

Interview structure and questions for the RPA expert

Theme	Question
Introduction	Can the interview be recorded?
	Can interview data be used for research purposes?
	What are your current job and main responsibilities in the company?
	Could you tell me about your education and job history?
RPA implementation process	What type of RPA is in use in the company, “simple” one or AI-enriched RPA?
	Are you/Have you been involved in the RPA implementation projects?
	Do you have experience with the RPA introduction process (in other business units at the case company)?
	If yes, using an example, could you tell how the RPA implementation has been conducted in other business units at the case company?
	What kind of tasks were the first ones automated?
	Do you consider the implementation process successful? Have clear impacts emerged?
	Why do you think that the implementation has started from certain teams/business units?
	Do you know if the implementation has been conducted the same way in all teams? Does the case company have a clear process defined for the implementation
	Do you think the RPA implementation and coordination of use work fine?
	What are the keys to a successful implementation of RPA at a team level?
	From whom the idea of the use of RPA has come in the teams? (Management/Employees)
	Has RPA encountered objections? If yes, how it was responded to/handled?
	Does RPA fit all white-collar jobs, or do you think there are some limits to the application?
	Do you know how RPA implementation has been conducted in other companies, especially successful references
RPA in sales support	What kind of tasks do you think RPA is best suited for?
	Do you come up with any ideas on how RPA could be utilized in the sales support team/process?
	RPA suitability with existing software, especially “in-house” technologies such as QMS and other configuration tools
	Can benefits be realised with RPA introduction in Sales Support?
	Are there clear obstacles hindering the RPA introduction in Sales Support?
	On what basis the order of tasks to be automated should be chosen?
Closing	Would you like to add something / does something else related to the topic cross your mind?
	Do you have any other key interviewees to recommend for this study?

Interview structure and questions for the Sales Engineers

Theme	Question
Introduction	Can the interview be recorded?
	Can interview data be used for research purposes?
	What are your current job and main responsibilities in the company?

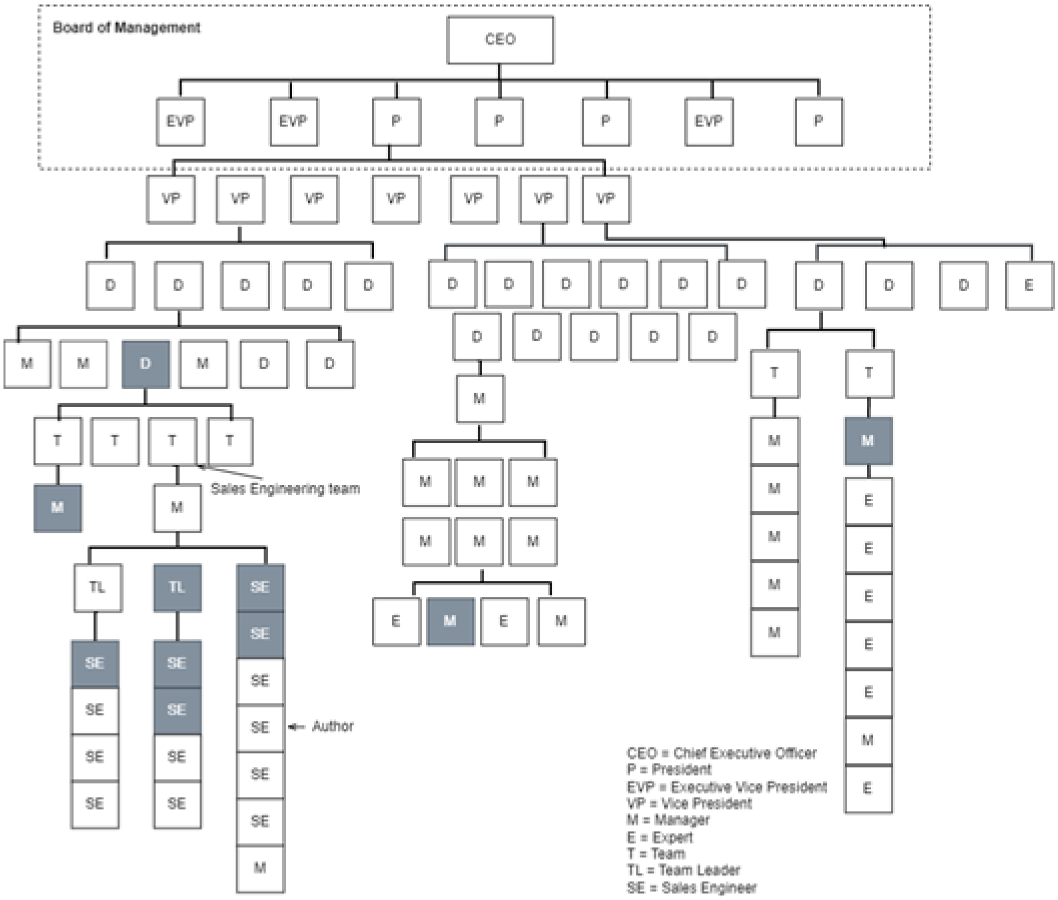
	Could you tell me about your education and job history?
Attitude towards RPA	What's your opinion on RPA's possibilities
	Are you interested in RPA? What would make you interested in it?
	How could the organization foster your commitment to RPA implementation and use?
	Have you completed the RPA basic training course?
	Yes:
	Did the training offer sufficient knowledge to develop robots yourself?
	Have you continued the use of RPA after the training course?
	Is it easy to recognize possible RPA use cases?
	No:
	Why?
	What kind of support do you think you'll need to be able to develop RPAs yourself and recognize potential use cases?
RPA implementation process	Is the RPA coordination structure clear to you (responsibilities, whom to contact etc.)?
	Do you think the RPA implementation and coordination of use are successful?
	Would you develop the RPA implementation somehow?
	What do you think of the current approach to RPA initiation? Whose responsibility the RPA creation should be?
RPA in sales support	Could you describe your role in sales support?
	Is the RPA introduction in the sales support process a good idea?
	Can benefits be realised with RPA introduction?
	Are there clear obstacles hindering the RPA introduction in the sales support team?
	Does your work include mechanical and/or repetitive tasks that consume a lot of time? How critical do you consider these tasks?
	Please tell examples, which kind of tasks would be useful to be automated in the sales support process?
	To consider automation the task or process should be clear and working as it is so RPA should not be used to fix processes. Does Sales Support have well-established processes, or should those first be fixed? (*Can the tasks be modified so that they're suitable for RPA automation?)
	On what basis the order of tasks to be automated should be chosen?
Closing	Would you like to add something / does something else related to the topic cross your mind?

Interview structure and questions for participants with a supervisory role

Theme	Question
Introduction	Can the interview be recorded?
	Can interview data be used for research purposes?
	What are your current job and main responsibilities in the company?
	Could you tell me about your education and job history?
Attitude towards RPA	What's your opinion on RPA's possibilities
	How could you be convinced of RPA so that you would decide to implement it in your team? (proof, benefits, research)
	How could management support employees in the RPA introduction?
	(Would you give employees time to design the robots at the expense of the regular sales engineering job if then the automation could be done?)
RPA implementation process	Is the RPA coordination structure clear to you (responsibilities, whom to contact etc.)?
	What do you think of the current approach to RPA initiation? Whose responsibility the RPA creation should be?
	(Whose responsibility the RPA robot creation should be?)
RPA in sales support	Could you describe your role in sales support?
	Is the RPA introduction in the sales support process a good idea?
	Can benefits be realised with RPA introduction?

	Are there clear obstacles hindering the RPA introduction in the sales support team?
	(Does your work include mechanical and/or repetitive tasks that consume a lot of time? How critical do you consider these tasks?)
	Please tell examples, which kind of tasks would be useful to be automated in the sales support process?
	To consider automation the task or process should be clear and working as it is so RPA should not be used to fix processes. Does Sales Support have well-established processes, or should those first be fixed? (*Can the tasks be modified so that they're suitable for RPA automation?)
	On what basis the order of tasks to be automated should be chosen?
Closing	Would you like to add something / does something else related to the topic cross your mind?
	Do you have any other key interviewees to recommend for the implementation of RPA?

APPENDIX B: INTERVIEWEES IN THE ORGANIZATION CHART



APPENDIX C: LIST OF SECONDARY DATA SOURCES

Presentation

Hudd, H. (07.04.2022). RPA Introduction. PowerPoint. (accessed 10.11.2022)

Web source

UiPath (2022). Wärtsilä: 400 Automated Processes Supported by a Citizen Developer Community. Available (accessed 10.11.2022): https://www.uipath.com/resources/automation-case-studies/wartsila-marine-energy-market-rpa

Videos

UiPath (2019a). #UiPathForward 2019: A DNA of RPA: How Citizen Developers Accelerate Automation. Youtube video. Available (accessed 13.11.2022): https://www.youtube.com/watch?v=3ZM4kOa3QpQ&list=PLG3LgE4atuv9raNIswWzIK-mxe_7uTtKh&index=10

UiPath (2019b). Wartsila's RPA Journey: From one robot in their first 4 weeks, to over 400 currently in production. Youtube video. Available (accessed 14.11.2022): https://www.youtube.com/watch?v=wLkvyH7bhno&t=57s

Report

Bangia, M., Cruz, G., Huber, I., Landauer, P. & Sunku, V. (2020). Sales Automation: The key to boosting revenue and reducing costs. McKinsey & Company. Available (accessed 12.11.2022): https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Marketing%20and%20Sales/Our%20Insights/Sales%20automation%20The%20key%20to%20boosting%20revenue%20and%20reducing%20costs/sales-automation-the-key-to-boosting-revenue.ashx