The Project of Improvement of Information Systems in HR Department of Infosys Company

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Master's thesis

2023

Tomas Bata University in Zlín
Faculty of Management and Economics

Univerzita Tomáše Bati ve Zlíně
Fakulta managementu a ekonomiky
Ústav podnikové ekonomiky

Akademický rok: 2022/2023

ZADÁNÍ DIPLOMOVÉ PRÁCE

(projektu, uměleckého díla, uměleckého výkonu)

Jméno a příjmení:	**Ani Gyulbudaghyan**
Osobní číslo:	**M210576**
Studijní program:	**N0413A050024 Business Administration and Entrepreneurship**
Forma studia:	**Prezenční**
Téma práce:	**The Project of Improvement of Information Systems in HR Department of Infosys Company**

Zásady pro vypracování

Introduction
Define the objective and the application methods used in the master thesis.
I. Theoretical part

- Prepare a literature review focused on Business process management and automation through information systems.

II. Practical part

- Analyze the main factors and information systems used in human resources management by big corporations.
- Propose a solution to improve communication and develop the „self-service desk" application in HR Department of Infosys company.
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Conclusion

Rozsah diplomové práce: **cca 70 stran**
Forma zpracování diplomové práce: **tištěná/elektronická**
Jazyk zpracování: **Angličtina**

Seznam doporučené literatury:

BLEISTEIN, Steven. *Rapid Organizational Change*. Wiley, 2017, 176 p. ISBN 9781119219033.
BRIDGER, Emma. *Employee Engagement: A Practical Introduction*. 2nd ed. London: Kogan Page, 2018, 296 p. ISBN 9780749483517.
MARTÍNEZ-ROJAS, A. et al. *Analyzing Variable Human Actions for Robotic Process Automation*. Business Process Management: 20th International Conference, Münster, Germany, 2022, 90 p. ISBN 9783031161025.
SZELĄGOWSKI, Marek. *Dynamic Business Process Management in the Knowledge Economy*. 1st ed. Cham: Springer, 2019, 213 p. ISBN 978-3-030-17140-7.
TAVANA, Madjid, ed. *Enterprise Information Systems and the Digitalization of Business Functions*. IGI Global, 2017, 486 p. ISBN 9781522523826.

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Datum zadání diplomové práce: **10. února 2023**
Termín odevzdání diplomové práce: **21. dubna 2023**

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Ve Zlíně dne 10. února 2023

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ABSTRAKT

V dnešním rychle se měnícím obchodním prostředí informační systémy a automatizační technologie významně ovlivňují řízení podnikových procesů (BPM). Výzkum se zaměřuje právě na dopad posledně jmenovaného na provozní procesy v HR odděleních, jak technologie pomáhají zefektivnit a automatizovat různé HR procesy, jako je nábor, onboarding, řízení výkonu a administrace benefitů.

Tato práce si klade za cíl nahlédnout do využití informačních systémů ve velkých korporacích, konkrétně ve společnosti Infosys. Primárním zaměřením je dceřiná společnost v Brně, rostoucí nadnárodní centrum s rychle se rozvíjejícím systémem práce. Analýza stávajících informačních systémů je prováděna s cílem pochopit přístup společnosti a fungování HR oddělení. Praktická část také obsahuje doporučení pro novou aplikaci s názvem Infoscion, která má flexibilní a přímočaré rozhraní pro zlepšení každodenních HR postupů.

Klíčová slova: Řízení podnikových procesů (BPM), Lidské zdroje (HR), Řízení lidských zdrojů (HRM), RPA, Informační systémy, AI

ABSTRACT

In today's fast-changing business environment, information systems and automation technologies significantly impact business process management (BPM). The research focuses on the latter's impact on the operational processes in HR departments precisely, how technologies assist in streamlining and automating various HR processes such as recruiting, onboarding, performance management, and benefits administration.

This thesis aims to look into the use of information systems in large corporations, specifically in the Infosys company. The primary focus is on the subsidiary in Brno, a growing multi-national center with a rapidly developing work system. The analysis of existing information systems is carried out to comprehend the company's approach and how the HR department functions. The practical section also includes a recommendation for a new application called Infoscion, which has a flexible and straightforward interface to improve daily HR procedures.

Keywords: Business Process Management (BPM), Human Resources (HR), Human Resource Management (HRM), RPA, Information Systems, AI

ACKNOWLEDGEMENTS

I would like to express sincere gratitude to everyone who contributed to completing my master's degree. I want to start by thanking my thesis supervisor, Ing. Michal Pivnička, Ph.D., for his essential contribution, insightful observations, and constructive criticism during the whole thesis process.

Likewise, I would like to thank the academic and administrative members of the Faculty of Management and Economics at Tomas Bata University for their valuable input and encouragement throughout the whole studies. Their dedication to teaching and research has inspired me to pursue academic excellence and strive for continuous improvement.

I would also like to express heartfelt gratitude to my family and friends for their constant support and understanding throughout the journey. Their unwavering support and encouragement have been a great source of strength and inspiration to me.

Thank you to everyone who helped me achieve this milestone in my academic career. I look forward to continuing to pursue my academic and professional goals with enthusiasm and dedication.

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Ani Gyulbudaghyan

CONTENTS

INTRODUCTION

Adam Smith established architectural principles that govern how businesses organize and function over two centuries ago. (Srinivasan, 2016) The current market of most industries is never static: it is dynamic and ever-changing, and product demand is constantly shifting as needs, wants, and technology change. (Mendling & Brocke, 2017)

Technological innovations associated with the "Fourth Industrial Revolution," also known as "Industry 4.0" in the literature, have also revolutionized nearly all industries. Optimizing numerous aspects of a company's organizational structure is the most intriguing and challenging aspect of this revolution. Implementing information systems, which significantly impact the entire value chain, is a huge indicator of a company's competitive advantage. (Iandolo et al., 2022)

Enterprises are constantly striving to improve their efficiency and competitiveness through various means. According to Dumas (2018), approaches to business improvement have evolved over time, but businesses are always looking for new ways to improve their efficiency. Processes need help to improve. Indeed, if procedures are not modified on a regular basis, they deteriorate over time. Today's rapidly changing industries require organization settings that can constantly adopt new ideas and shorter time-to-market tools.

According to Srinivasan (2016), the enterprise of tomorrow has the incentive to be intelligent while keeping its efficiency. It requires the capacity to constantly monitor and analyze internal and external threats and opportunities and adjust accordingly in operational processes to counter such risks or capitalize on such opportunities. Though, he noted that more is needed to analyze the massive amount of unstructured data that has become available. The business must effortlessly incorporate such analytical techniques into its daily operational procedures. Since they are a part of the same continuum, these two worlds are not separate and dichotomous. (Srinivasan, 2016)

Under this competitive reality, Human Resource Management (hereinafter referred to as "HRM") has a more critical role than ever since new business models demand innovative ways to include people. (Pomffyova, 2018)

OBJECTIVES AND METHODS OF MASTER THESIS PROCESSING

Fast-changing markets, industries, and services necessitate organizational structures capable of constant flexibility, new ideas, and faster time-to-market. HRM is more important than ever in today's competitive world since new sorts of businesses necessitate new methods of incorporating people.

The study aims to identify and implement improvements to the HR department's information systems for handling employee data, recruiting, performance management, training and development, employee engagement, and other HR operations. The research seeks to improve the efficiency of HR operations in Infosys company while enhancing employee experience and overall organizational performance.

To efficiently perform the study, the research questions are:

- What is the definition of BPM and its connection to business process automation via information systems?
- The essential functions and elements of the BPM in today's corporate environment
- What are the key benefits and drawbacks of using automated systems in HRM?
- How do those factors impact the productivity of the company?

- To determine the degree of improvement in communication and productivity upon implementing the new software in the HR department.

The thesis also involves a comprehensive analysis of the existing information systems used by the companies in HR departments, including the strengths and weaknesses of each system, as well as the requirements and preferences of HR personnel and employees. Based on this analysis, the study will identify areas for improvement and recommend changes to the current systems or the implementation of new systems in Infosys.

PESTLE analysis and BCG matrix will be utilized at the start of the research to evaluate the environmental factors that can affect the company's operations. By conducting a PESTLE analysis, the thesis will provide an in-depth understanding of the external factors that can impact the implementation of a self-service desk application. Simultaneously, the BCG matrix will be utilized at the start of the research to understand the company's profile, the areas in which it operates, and whether the company's portfolio is appropriate for creating the application without outside resources.

A SWOT analysis will be conducted to evaluate the feasibility of implementing the application in the HR department of Infosys. This analysis will help to identify the internal factors that can impact the

implementation, such as the current IT infrastructure, employee skill set, and budget constraints. It will also identify the external factors the organization may need more control over, such as market competition, regulatory framework, and changing customer needs.

The main goal of the practical part is: Implementation of a "self - service desk" application in HR department of Infosys company

In order to successfully implement the new information systems, an internal process analysis was performed apart from the above-mentioned methodologies. The HR activities of the HR department are the main focus of the process analysis:

- Recruitment and selection process
- The employee onboarding process
- Frameworks to enhance employee engagement
- Performance management and evaluation

To summarize, the main objectives of the practical section are:

- Process HRM analysis. Through the study of internal processes, apprehend and compare the existing information systems
- Create a methodical approach to using information systems in HRM. Defining the advantages and functions of the proposed technology and its impact on productivity.
- Make the necessary plan of action and the needed timeframe to develop an inclusive and flexible app-based platform
- Perform cost and risk analysis of the proposed solution.

The RIPRAN methodology will be used for risk assessments for analyzing project risk. It focuses specifically on analyzing project hazards that must be processed before execution (RIPRAN, 2023).

PERT (Program Evaluation and Review Technique) and CPM (Critical Path Method) project management methodologies will be utilized to estimate the schedule for project completion. It is used as a tool to plan, schedule, and control the phases by defining key activities, deciding the sequence of tasks, and predicting the time necessary to finish the project.

A cost analysis is also performed to determine the project's development and maintenance costs. The ROI of the project will be assessed using the Time Value of the Money method to validate the predicted financial benefits.

I. THEORY

1 LITERATURE REVIEW

Sustainable development through a change in business operations depends on open innovation in business processes. Business process management (hereinafter referred to as BPM) has grown to be an essential strategy for organizations looking to increase efficiency, lower costs, and improve organizational agility. In recent years, it has been discovered that systems play a critical role in BPM automation, resulting in a greater emphasis on technology to support business processes.

Several studies have been carried out to explore the connection between BPM and automation through information systems. Araujo & Gomes (2022) conducted research on the role of Business Process Management Systems (BPMS) in automation. The study discovered that BPMS could improve task efficiency, communication, and cross-departmental collaboration. Furthermore, according to the study, BPM automation allows organizations to reduce operational costs, streamline workflow processes, and save time on tasks.

Aside from BPMS, the effects of other information system types on BPM automation have also been studied. For instance, research conducted in 2012 by Yeh et al. examined robotic process automation (RPA) to automate repetitive tasks like data entry and document processing. According to the study, RPA can increase output, decrease human error, and improve data input accuracy while freeing up personnel to work on more complex tasks.

Contrastingly, it is well known that every business process has a lifecycle approach, moving from the process identification phase through implementation to the process monitoring and control phase. The paradoxes surrounding BPM and its alignment with information systems are being addressed by specialists who emphasize digital transformation (Ahmad & Looy, 2020). They emphasize the importance of implementation and management in the effectiveness of information systems for BPM automation. Szelągowski & Berniak-Woźny (2022) found that user training and engagement are critical to successfully implementing BPM automation. According to the study, user adoption of automation tools was higher in organizations that provided adequate system training.

In summary, incorporating information systems has proven to be effective in BPM, increasing organizational efficiency, cost savings, and streamlined workflows. Organizations shall prioritize cross-deal integration, staff training and engagement, and proper system management to maximize the benefits of information systems.

1.1 Introduction to Business process management

1.1.1 Definition of Business process management

Business process management (BPM), as it is commonly defined, is a cross-disciplinary research field that builds on and consolidates research on how to better manage the redesign of particular business processes and how to develop a foundational BPM capability in organizations serving a wide range of purposes and contexts (Rosemann et al., 2010). Hence, specialists of the field consider BPM as an organization's core competency for managing business processes, from operational to managerial.

Szelągowski and Berniak-Woźny (2022), define BPM as a set of methods, techniques, and systems to identify, analyze, improve, and monitor an organization's business processes. It is based on the process orientation paradigm, which replaces the traditional functional perspective on organizational structures to address increasing market dynamics, growing competitive pressure, and technological advancements. The potential benefits of BPM range from increased flexibility, agility, and responsiveness to improved innovativeness and customer-centricity. (Dumas et al., 2018) Despite the numerous benefits, implementing BPM can be complex because it affects multiple organizational levels simultaneously and necessitates time, money, and human resources. (Mendling & Brocke, 2017)

1.1.2 The core elements of BPM

Throughout the development and research of the BPM framework, experts identified six core elements that serve as the framework's building blocks. The following six elements represent key success factors for BPM. Therefore, each organization seeking to achieve success with BPM at some point should consider each element.

Strategic Alignment

BPM must be integrated into an organization's overall strategy. Strategic alignment or synchronization is described as close relationship between organizational goals and company processes that enables ongoing and effective action to improve business performance. Procedures must be established, implemented, monitored, and measured following strategic goals and unique conditions (e.g., product lifecycle, market position) (Rosemann et al., 2015).

Governance

BPM governance helps ensure appropriate and transparent responsibility for roles and duties at several levels of BPM, such as portfolio, program, project, and operations. Furthermore, the design of decision-making and incentive procedures to direct process-related actions is emphasized (Doebeli et al., 2011).

Methods

Methods are defined in the context of BPM as the set of tools and techniques that support and enable activities throughout the process lifecycle and within enterprise-wide BPM initiatives. (Rosemann et al., 2015). Examples are methods that facilitate process modeling, analysis, and process improvement techniques (Dumas et al., 2018). For instance, Six Sigma is a BPM approach based on integrated BPM methods (Adesola & Balnes, 2005).

Information Technology

IT-based solutions are critical for BPM projects. With a specific focus on process analysis (e.g., statistical process control) and process modeling assistance, BPM-related IT solutions increasingly deliver themselves as process-aware information systems (PAIS) (Dumas et al., 2018). Process awareness denotes that the software clearly understands the procedure that must be followed. The process awareness might arise from input in process models, or it could be more implicitly incorporated in hard-coded procedures, as in typical banking or insurance applications (Rosemann et al., 2015).

People

People are portrayed as individuals and groups who continually enhance and use their process and process management skills and knowledge to improve company performance as a fundamental component of BPM. Consequently, this component represents the BPM capabilities mirrored in an organization's and its ecosystem's human capital (Mendling & Brocke, 2017)

Culture

Comparative case studies indicate the considerable influence of culture on the effectiveness of BPM, as the latter is concerned with building an enabling environment that supports the different BPM activities. Specific organizational values supportive of BPM have been identified through research

and methods to measure and further develop a BPM-supportive organizational culture (Schmiedel et al., 2013). It should be highlighted, however, that the influence of cultural activities has a far longer time horizon than any of the other five components.

The chart below shows the detailed breakdown of each element.

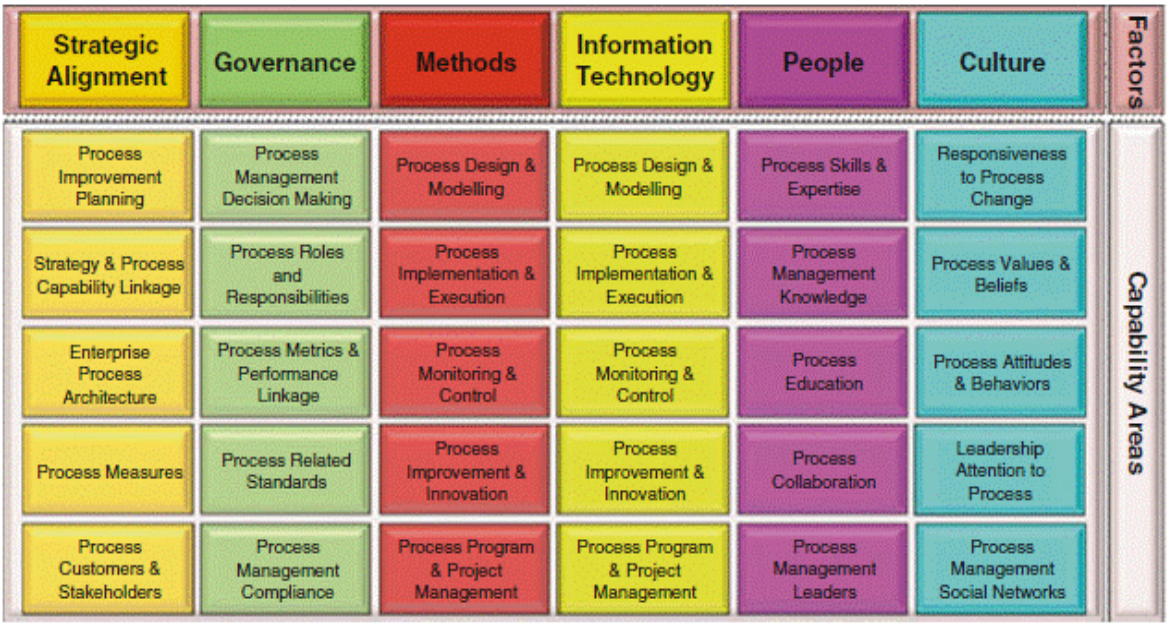


Figure 1 The 6 core elements of BPM (Rosemann and Brocke, 2015)

1.1.3 Business Process Modelling

Dumas (2018) defines Business Process Modelling as the practice of mapping out various business processes, their inputs, outputs, and dependencies in order to optimize them. It is a visual representation of the steps in a specific business process, depicting how different elements interact to achieve a specific goal.

Organizations use business process modeling to identify inefficiencies, bottlenecks, and redundant processes. By identifying these issues, organizations can redesign their processes and improve operations, leading to better decision-making and increased efficiency in the long run.

The key steps involved in business process modeling are outlined below.

- Identify business processes:

The first step in business process change and modeling is identifying business processes that need optimization. It can be accomplished by conducting a thorough analysis of existing processes to

identify inefficiencies, bottlenecks, and opportunities for improvement. (Doebeli et al., 2011) It is critical to involve stakeholders from across the organization when identifying processes to gain more understanding of the process. (Rosemann et al., 2015)

- Create a map of existing processes:

This entails developing a process map with a precise, step-by-step description of the resources needed and the stakeholders involved. The process map should be detailed, highlighting all activities involved in the process as well as any handoffs, approvals, or dependencies. (Dumas et al., 2018)

- Analyze processes:

After creating a process map, the next step is to analyze the processes. This entails identifying areas of inefficiency, bottlenecks, and waste. The analysis must be driven and include stakeholder input to understand the process comprehensively. The analysis aims to identify improvement areas and derive a plan to optimize the processes (Araujo & Gomes, 2022).

- Improve processes:

Following analyzing the processes, the next step is to optimize them. Making changes to streamline workflows, eliminate bottlenecks, and reduce costs is part of this. The decisions must be made to increase efficiency, productivity, and customer satisfaction. Follow the plan that was developed in the previous steps to optimize processes. (Rosemann et al., 2015)

- Modifications and testing:

Following process modification, the next step is to test and implement them, ensuring that the changes result in the desired improvements and that no unintended consequences occur. Changes must be rigorously tested, and the results analyzed in order to determine their impact. Alterations may be incorporated into the business after they have been validated. (Dumas, 2018)

1.2 Digitalization and its relationship to BPM

Digitalization and Business Process Management (BPM) are inextricably linked, as digitalization can enable BPM through process automation and the use of advanced tools and technologies.

The use of digital technologies in various aspects of an organization's operations to improve efficiency, accuracy, and speed is referred to as digitalization. On the other hand, BPM is a

management approach that aims to improve business processes' performance, productivity, and profitability. (Van Looy, 2017)

Fischer (2020) mentions that BPM can be used as a tool for digital transformation to ensure that user needs are met, data is organized, and business processes are streamlined. Integrating digital technologies allows BPM to function more optimally by strengthening business processes and producing real-time insights that can be used to improve performance.

Cloud computing, machine learning, artificial intelligence, and the internet of things (IoT) can be integrated with BPM to create more innovative and efficient workflows, improve process accuracy, and provide insights to drive informed decision-making. Finally, digitalization and its integration with BPM have the potential to improve business operations by streamlining processes, increasing efficiency, and, ultimately, improving business performance. (Goerzig & Bauernhansl, 2018)

1.2.1 Business Process Modeling Notation (BPMN)

Dumas (2018) highlights that business process modeling can be approached from several f perspectives. The control-flow outlook represents the task ordering and causality linkages. The data viewpoint meanwhile defines the process activities' input and output data. The resource view outlines the organization's structure and identifies resources, roles, and groups. The task viewpoint connects the other three views by describing particular process phases.

Numerous corporate procedure model notations highlight the control-flow perspective. It is accurate, for example, of flowchart-based process modeling notation.According to Alotaibi (2014), BPMN is a flow chart system for modeling a strategic company procedure's phases from beginning to end. It is essential to Business Process Management because it clearly illustrates the complete sequence of business operations and information flows required to complete a cycle. Thus, it resolves the ambiguities of textual process specifications by visually depicting the sequence of business activities, and information flows required to complete a specific process.

The diagram below illustrates a simple BPMN business process model for credit approval.

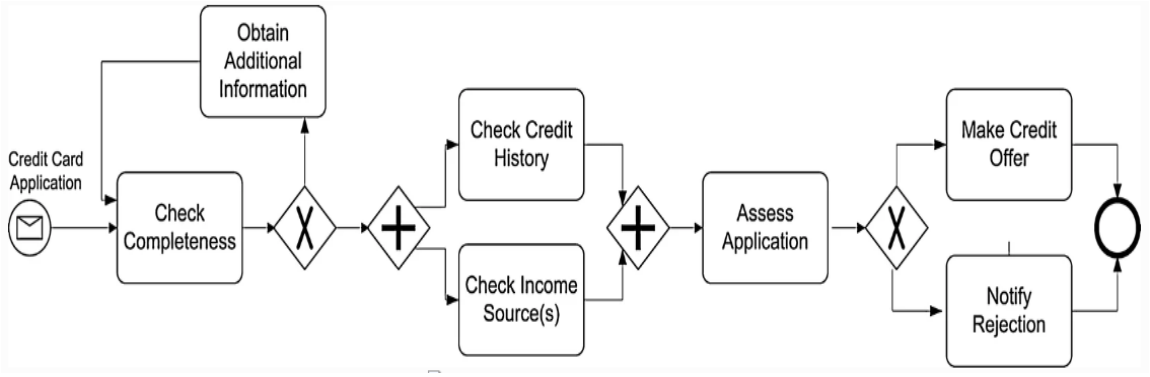


Figure 2 Sample of a business process model (Dumas et al., 2018)

The receipt of a credit application, represented by the model's leftmost element, initiates the execution of this process model. The application is then reviewed for completeness. The application can be marked as complete or incomplete. The decision gateway depicted by the diamond labeled with an "X" sign represents this option. If the application needs to be completed, the applicant is asked for more information. Otherwise, two checks are carried out simultaneously: a credit history check and an income check. This is indicated by a parallel split gateway (the first diamond with a plus (+) sign). The two parallel checks then converge into a synchronization gateway (the second diamond is labeled with a "+"). The credit history check may be performed automatically, whereas the income source check may necessitate a phone call to the applicant's employer. After these checks, the application is evaluated and either accepted or rejected. (Dumas, 2018)

BPMN effectively enables organizations to analyze and optimize their workflows, reduce costs, and improve overall performance. It is a tool that helps businesses stay competitive in a constantly changing business environment.

1.3 Automation of Business Process

1.3.1 Usage of Robotic Process Automation (RPA)

For many entrepreneurs and professionals, the essential question is, "What should be controlled automatically, and what ought to be performed by people?". On the other hand, advances in data science, machine learning, and artificial intelligence push us to examine this subject frequently. Robotic process automation (RPA) is one of these advancements. (Van der Aalst et al., 2018)

RPA has gained considerable interest in recent years because of its potential to change how companies operate. It is one of the most advanced technologies in the fields of computer science, electronics and

communications, mechanical engineering, and information technology. It combines hardware and software, networking, and automation to perform simple tasks. (Ribeiro et al., 2021)

Likewise, Slaby (2012) defines RPA as a technical imitation of a human worker to automate structured activities in a timely and cost-effective manner. Although the word "robot" conjures up ideas of electromechanical machinery, it is critical to note that RPA is a software-based solution designed to do repetitive operational activities and procedures, such as data input or invoice processing, with high accuracy and speed. RPA is now being utilized in various sectors to automate rule-based, repetitive operations that require little to no decision-making, allowing human workers to focus on more complicated jobs that require creativity and critical thinking.

Van der Aalst et al. (2018) examined the figure below to better show the importance of RPA. In this graphic, the "long tail of work" is represented. The many sorts of situations are depicted on the x-axis. Two instances of the same type are comparable and may be treated similarly. The y-axis depicts the frequency of certain case kinds. A Pareto distribution is typically found, implying that 20% of the case types may explain 80% of the cases. As a result, several case types are exceedingly rare. Automation aims to address the most prevalent case types (say, 20% of all case types). Because automation is excessively costly, less common instances are not investigated.

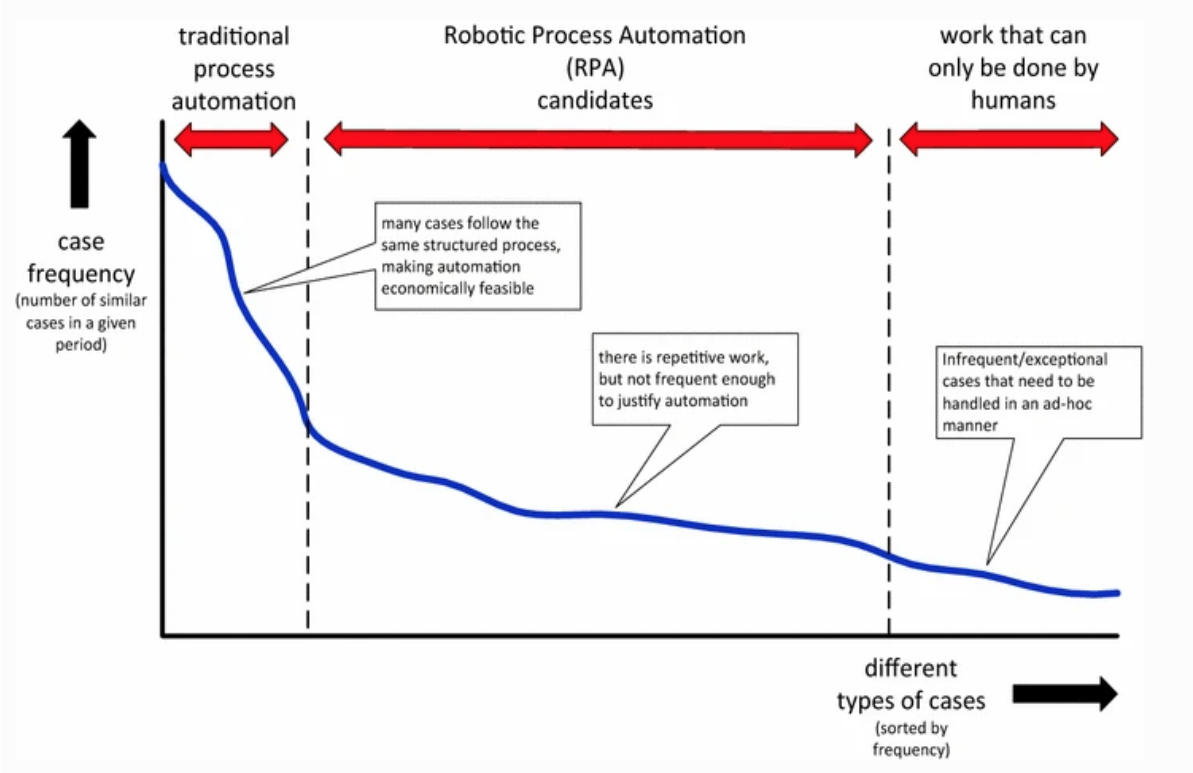


Figure 3 Positioning of the Robotic Process Automation (Van der Aalst et al., 2018)

When various proprietary systems must be connected, costs skyrocket. As a result, the remaining 20% of cases typically go through manually by humans inputting data and making choices on a repetitive basis. Humans are the glue between various IT systems in such circumstances. The other 20% of cases, on the other hand, span 80% of the case kinds and take substantially longer than the frequent ones. RPA can help with the middle portion by having agents communicate with multiple information systems as if they were people, which is only practicable or financially practical in particular cases. As a result, staff are still required to manage the "end of the long tail" (see in right-hand side of the Figure).

Meanwhile, Aguirre and Rodriguez (2017) point out that, despite its potential benefits, RPA implementation can be challenging. Significant planning and coordination are required to ensure that the technology is properly integrated into existing systems and processes. Organizations must have a clear understanding of which tasks would benefit the most from automation and carefully weigh the costs and benefits of implementing RPA. While RPA can increase efficiency and productivity, it requires significant time, money, and resource investment.

1.3.2 RPA limitations and disadvantages

As previously stated, RPA has numerous advantages, such as increased efficiency and cost-effectiveness; nonetheless, there are some disadvantages to consider. Below are listed some of the main concerns highlighted by the specialists.

Limited decision-making capabilities:

RPA bots' limited decision-making capabilities refer to their inability to make complex decisions or exercise judgment outside their pre-programmed rules. RPA bots are intended to automate repetitive and rule-based tasks but lack cognitive abilities and reasoning skills. RPA bots operate by following pre-defined rules and procedures and can only execute tasks that fall within their programmed parameters. They can only analyze or interpret data within the rules given and cannot make decisions based on context or nuance. (Aguirre & Rodriguez, 2017)

As an example, Huang & Vasarhelyi (2019) clarify that an RPA bot can be programmed to extract data from an invoice and insert it into a database. However, it needs to determine whether the invoice is valid or fraudulent. Similarly, an RPA bot can be programmed to follow a set of customer service procedures but cannot deviate from those procedures to address a unique customer concern. This limited decision-making capability can be detrimental in situations requiring human judgment, such

as complex problem-solving or creative thinking. In such cases, RPA bots cannot provide the level of insight or adaptability that human workers can.

As a result, organizations must carefully consider the tasks they wish to automate as well as the level of human involvement demanded to ensure that RPA is used appropriately and effectively.

Integration issues

The challenges associated with incorporating RPA technology into existing systems, processes, and applications are referred to as integration issues. To perform their tasks, RPA requires access to data, applications, and systems, and integration issues can arise when these systems need to be updated, complex, or have different data formats. (König et al., 2020)

The compatibility of RPA bots with legacy systems is a standard integration issue. Many organizations have legacy systems that may or may not be compatible with modern RPA technology, making automation of tasks that rely on these systems difficult.

Another integration issue is the requirement for data extraction and processing. RPA bots require data access, but data can be stored in a variety of formats, including structured, semi-structured, and unstructured. Extracting and processing data from these various formats can be a complex and time-consuming process that may necessitate the use of additional tools or resources. (Mendling & Brocke, 2017)

Additionally, integration issues may arise when RPA bots are required to interact with third-party applications or systems. These systems may have different data structures, security protocols, or interfaces, which can cause compatibility issues and necessitate additional customization. (Ribeiro et al., 2021)

Security concerns

According to Eulerich et al. (2022), RPA bots, like any technology, have their own set of security vulnerabilities that must be handled to ensure that they do not endanger an organization's sensitive information or systems. Security risks occur because RPA bots have access to sensitive data and systems. The following are some of the formal security concerns of RPA bots:

1. Data Security: In order to automate processes, RPA bots need access to sensitive data. If bots are not adequately protected, they may be subject to data breaches, resulting in the loss of

critical information. It can comprise personally identifiable information (PII), financial information, and similar confidential data (Huang & Vasarhelyi, 2019).

2. Access Controls: RPA bots must be approved appropriately and authenticated to access systems and data. If access restrictions are not correctly established, unauthorized people may get access to sensitive data, resulting in data breaches and other security problems (Eulerich et al., 2022).
3. Bot Management: RPA bots must be controlled and monitored to ensure they function correctly and do not pose a risk to the enterprise. Bot management entails ensuring that bots are correctly set up, executing the relevant operations, and not being utilized for nefarious reasons (König et al., 2020).
4. Integration Security: RPA bots frequently interact with other systems and applications, which might constitute a security risk if not adequately secured. Integration security entails ensuring that data is securely encrypted during transmission, APIs are secure, and access restrictions are correctly applied (König et al., 2020).
5. Malicious Use: RPA can be used for harmful objectives such as data theft or system assaults. Companies must ensure adequate safeguards to avoid RPA bot misuses, such as creating access restrictions, monitoring bot behavior, and restricting bot access to essential systems and data (Eulerich et al., 2022).

Overall, these security considerations underline the need to adequately protect RPA bots to ensure they do not compromise important information or systems inside a business. To reduce the dangers associated with these technologies, organizations should adopt proper security measures and routinely audit and monitor the security of their RPA bot installations.

Maintenance cost

Maintenance concerns of RPA bots refer to the expenses associated with maintaining and updating the bots over time. As with any software application, RPA bots require regular maintenance to ensure they continue functioning correctly and efficiently. Maintenance costs can include several elements, such as personnel, software tools, training, and infrastructure. (Mendling & Brocke, 2017)

According to Huang & Vasarhelyi (2019), RPA implementations must include a plan for regular maintenance and updates, including backup and recovery procedures, to address maintenance concerns. This plan should include monitoring bot activity and performance, promptly identifying and addressing issues, and ensuring that the bots are running on the latest software versions.

Training and support are among the most significant expenses associated with RPA bot maintenance. RPA bot maintenance and support necessitate skilled personnel, such as developers, data analysts, and IT professionals, to monitor, manage, and troubleshoot the bots. The number of personnel required will be determined by the size and complexity of the RPA implementation.

RPA also requires a stable infrastructure and environment to function properly. Changes to the underlying infrastructure or environment can impact bot performance, so organizations must ensure that their infrastructure and environment are optimized for RPA bot operations. The latter can include maintaining hardware, ensuring appropriate software licenses, and providing necessary network connectivity. (Dumas, 2018)

Reduced employment opportunities

Another vital factor to consider is the potential impact of RPA on the workforce, as people management is a barrier during RPA implementation. While RPA allows people to focus on more complex tasks, it can also result in job displacement, particularly for low-skilled and routine-based roles. The latter can have an effect on the workforce and the economy as a whole. (Madakam et al., 2019)

According to Martinez-Rojas et al. (2022), there is a need for additional in-depth literature on a transparent Organizational Change Management (OCM) framework that is appropriate for RPA initiatives and aids in managing the requirements and expectations of project stakeholders. As a result, to help in the development of an appropriate OCM framework for RPA deployments, a socio-technical approach to RPA implementation is necessary. Companies must minimize job losses and offer employees the training and assistance they need to transition to new jobs.

To summarize, the use of RPA has the potential to transform the way organizations operate. However, proceeding cautiously and considering the potential risks and challenges is necessary. Organizations can successfully implement RPA and achieve significant improvements in efficiency and productivity with careful planning and consideration.

2.1 Implementation of Information Systems in HR

2.1.1 Automation of Human Resource Management (HRM)

Automation technology is changing and transforming innovation into the industrial landscape and Human Resources (HR) should ensure to adapt and practice its deployment to realize its benefits in time and for cost savings. (Bussler & Davis, 2016). Workflow management (WfM) was also prevalent at the end of the twentieth century. However, as Šimek and Šperka (2019) point out, the focus on WfM has been on utilizing computers to assist in managing business processes, which may be made up of many individual activities, rather than using computers to automate individual jobs.

Similarly, Bridger (2018) defines *automation* as using electronics and computer-controlled technologies to replace human tasks. Human resource management is an essential component of every business, whether it is in retail, healthcare, education, or any other industry. Activities such as hiring new workers, training, or ensuring that local labor laws are obeyed with HR processes are crucial to every organization; hence, HR has always been considered a highly manual department operation. Workers are accustomed to performing this manually and completing the task on their own. Nevertheless, everything in the HR process is evolving at a quick pace.

HRM, which is heavily data-driven, has embraced technology and what it can achieve. Digitalization has resulted in more informed decisions, more productivity for HR and the entire firm, and reduced costs. Wireless technology has created a virtual office environment, and automation of most HR functions has reshaped the field. Suddenly, information technologies transform gobs of HR data into usable information, adding value. As a result, a mental change also occurred "People are being transformed from resources to assets. HR is no longer tactical and reactive, but strategic and proactive, thanks to the usage of digital solutions " (Bussler & Davis, 2016).

Consequently, information technologies and process automation are transforming Human Resource Management (HRM) in firms, enabling breakthroughs in traditional HR roles and operational efficiency that was unthinkable only five years ago. Martínez-Rojas et al. (2022) mention that several types of information systems can be implemented in human resources, such as Applicant Tracking Systems (ATS), Human Resource Information Systems (HRIS), Robotic Process Automation (RPA), Learning Management Systems (LMS), and Performance Management Systems (PMS). Each system has its own set of features and perks that may assist HR departments in streamlining their procedures and increasing their overall performance.

To recap, in the previous decade, HR has transformed from a business unit to a service center. The service center is going online for employee self-service and to boost self-reliance. Information technology has quickly moved HR from outmoded data collection and paper pushing to stressing information interchange and strategic workforce analysis. By continuously utilizing technology to improve the quality of the work environment, HR can reduce attrition, better train employees, and attract top candidates (Srinivasan, 2016). Technology can significantly improve HR's access to information, allowing the department to raise the value of the organization's human resources. Modern human resource professionals must be trained as data analysts and internal business consultants. As a result, human resource professionals must plan for the future by preparing for new tasks or risk being outsourced (Bussler & Davis, 2016).

2.1.2 Human Resource Information Systems (HRIS)

According to Masum et al. (2018), HRIS is essential tool for gaining a competitive edge in enterprises. It saves time and costs by completing Human Resource (HR) activities more quickly and correctly. The rapidly changing nature of today's industry provides a unique hypothesis that HRIS is a strategic partner in an organization rather than a typical cost-driven one. It offers a consolidated database of personnel information, automates HR operations, and aids in human capital management decision-making.

Gill et al. (2010) defines HRIS as using information technology to manage human resource activities and applications successfully. The computerized strategy often includes an integrated database that tracks personnel and job-related information. It may also be defined as integrated systems that acquire, store, and analyze information on an organization's human resources. (Madakam et al., 2019)

Components of HRIS

As seen in the figure below, HRIS has 3 key functional components.

Figure 4 HRIS Components (Aggarwal & Kapoor, 2012)

- Input -offers the capability to enter HR data into the HRIS, more precisely, personnel information. Initially, procedures and strategies are required to acquire appropriate data, which must then be fed later into the system. Edit tables can be used to determine whether the data is suitable. These tables include acceptable values against which the data is automatically evaluated. The system should be able to update and replace the edit tables. Nowadays, scanning technology enables for the scanning and storage of an actual image of an organization's document, including signatures and handwritten notes. (Aggarwal & Kapoor, 2012)
- Data maintenance - the function is in charge of effectively updating information that is stored in various storage devices. As changes occur in human resource information, this information should be incorporated into the system; as new data is introduced, it is frequently helpful to keep the old data as historical data. Upon data entry into the HRIS, it updates and adds new data to the database. (Masum et al., 2018)
- Output - this is the most apparent function of HRIS since most HRIS users are not concerned with collecting, editing, and updating human resource data; instead, they are concerned with information and reports to be utilized by the systems. HRIS analyzes inputs, performs essential computations, and arranges the presentation to produce valuable output for computer users. (Aggarwal & Kapoor, 2012)

2.1.3 Benefits and functions of HRIS

As previously noted, HRIS aids in the recording and analysis of employee and organizational information and documents, such as employee handbooks, emergency evacuation, and safety protocols. It also assists companies in maintaining an accurate, thorough, and up-to-date database that can be obtained via reports and manuals. HRIS advantages can be systematized according to Obeidat (2012).

1. Improve human resource operations to boost competitiveness.
2. The capacity to utilize a wide range of human resource operators
3. Move the emphasis from operational (transactional) HR information to strategic human resource information.
4. Make workers an active part of the HRIS.
5. Reengineering the whole department

The HRIS advantages are also demonstrated in the figure below.

Figure 5 Overall benefits of HRIS (Obeidat, 2012)

Additionally, according to Bussler & Davis (2016), the notion of HRIS stems from an employee payroll system. In the payroll arena, systems currently manage all forms of employee data, such as employee Full-Time Equivalent (FTE) and exempt status, changes in private affairs such as dependents or weddings, beneficiary changes, and employee directories. Huang & Vasarhelyi (2019) highlight that Microsoft claimed in recent years that utilizing such a payroll system saves them more than a million dollars annually. The majority of the savings come from not printing and mailing profit statements.

HRIS also facilitates the streamlining of procedures such as performance appraisals. The program monitors fundamental skills and gives managers suggestions for employees who need to develop or be coached. It can also notify the person in charge of departmental irregularities that indicate a need for training or management attention. These evaluation tools enable businesses with several locations to function consistently (Masum et al., 2018).

Moreover, Srinivasan (2016) notes how HRISs have enhanced training and development processes. The method makes it easier to track training, skills, and competencies. HR might use the technology to manage human resources and optimize talent. The technology stores "electronic records" for each current employee, giving the company a computerized inventory of its human capital. It can detect skill shortages and assist HR in planning appropriate training. Instead of looking for talent outside

the firm, the system executes queries to locate qualified inside candidates for each job. Employees may also use the system to manage their careers. If an employee is interested in a certain career path but lacks certain skills, the worker can begin appropriate training, and the system tracks which courses have been completed.

Continued education is frequently related to a higher range of salaries; therefore, incentives to learn and morale are more elevated in these firms. More dedication results when a company rewards its people for their expertise and talents. Furthermore, many training options are available online for both workers and vendors. Training schedules, handouts, and course descriptions are available on the workplace intranet (Bridger, 2018). The benefit of online training is its 24-hour availability, which is especially important for worldwide organizations.

Online training is also considered less expensive since it removes travel expenses and the period away from the workplace. Furthermore, the fear of the classroom atmosphere makes online learning enticing to certain employees; it allows them to remain semi-anonymous while asking questions and studying at their own pace (Mendling & Brocke, 2017).

2.2 Robotic Process Automation (RPA) in HR

Simplified and well-controlled procedures allow for seamless integration across all HR operations, resulting in cost savings, decreased time delays, and fewer employee data losses. Most businesses' main expense item is human resources and staff. These expenses can be more transparent and predictable thanks to automation. Accuracy is essential not only from a financial standpoint but also from a risk standpoint. Improved data integrity enhances forecasting and reporting processes, allowing for more uniform but configurable reports with various applications. As a result, the workforce is more strategically utilized, with resources concentrated on more strategic, value-added activities. (Martínez-Rojas et al., 2022)

Masum et al. (2018) also note that during the following years, the RPA industry is predicted to expand to almost $200 billion, with the great majority of Fortune 1000 organizations embracing it. Predictions also forecast a decrease in regular occupations and a rise in nonroutine ones. While the prediction numbers range widely, they all point to upcoming automation technologies as highly disruptive to a business's operation.

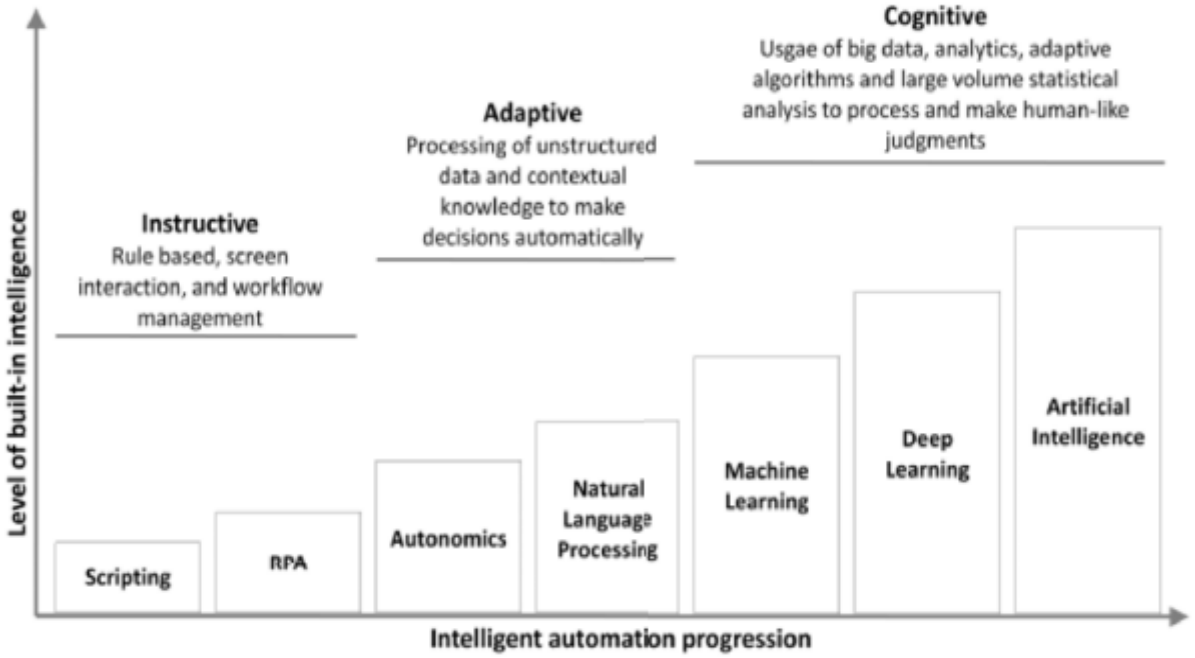


Figure 6 Intelligent Automation Services (Balasundaram & Venkatagir, 2020)

As seen in the above graph, Balasundaram & Venkatagir (2020) affirm that RPA has a potential for application in the HR procedures. It may assist in automating employee onboarding and offboarding activities, updating employee information, the timesheet submission process, and many other everyday HR chores. RPA in HR can support an organization's Industry 4.0 journey by providing better service to employees and managers, ensuring that HR processes comply with required standards and regulations, facilitating immediate initiation and completion of the processes, enhancing efficiencies by digitizing data and auditing process data, delivering cost savings for manual and repetitive tasks, and enabling the HR team to be more productive.

Besides, according to Papageorgiou (2018), the objective is to link an RPA program to strategic goal planning rather than merely technical improvements. This may seem contradictory, but before choosing pilots and establishing an RPA program, senior executives should understand HR RPA programs and overall RPA procedures. Companies should adopt the idea that mundane jobs, which may be thought of as virtual workers, should be controlled by bots. After that, they should enlist the assistance of IT for governance and support while allowing HR to drive application and design.

Additionally, Aguirre & Rodriguez (2017) clarify that RPA bots can often operate 24/7 on all days of the year instead of employing employees who work just for particular hours and even then require frequent breaks. Because it executes repetitive jobs without boredom, task performance quality is

maintained compared to people. Costly human errors that result in financial losses can therefore be avoided. Another benefit of bots is that they may scale based on the volume of work. Unlike humans, new bots may be created, or even the present number of bots can perform the increased task. This is especially useful during high seasons like sales and holidays. Therefore, long reaction times, typical in non-RPA environments, can be avoided.

Tavana (2017) uses the onboarding of new workers as an example of an RPA application in Human Resources (HR). The procedure includes creating user IDs for the new employee across many systems and apps, which is a common and recurring task. Similar processes may be readily automated, using a bot to onboard a new employee.

Nevertheless, as Papageorgiou mentions (2018), the purpose is not to diminish the workforce. The objective is to eliminate the manual chores that employees dislike presently, allowing employees and the business as a whole to focus on enhancing customer service and staff satisfaction. This will result in increased retention as well as shared beliefs and goals. Additionally, increased retention will boost efficiency and profitability, particularly among high performers. By starting the RPA journey today, HR departments will be able to lead the disruption rather than being forced to react to it.

Nawaz (2019) similarly explains that Humans and RPA robots should collaborate; the robots will handle copying, redundant data, and other related duties, while humans may focus on complicated challenges and make quality work and decisions. Due to the talent pool being interwoven with various teams, recruiters must grasp the recruiting requirement, talent community identification, recruitment marketing techniques, and employee churn. However, RPA should offer candidates empowerment and immediate pleasure for successful recruiting integration. It is critical to have hiring time and cost-effectiveness. RPA must reach out to prospective candidates quickly. Integration of RPA is essential to handle communications, candidate information, sourcing and screening, and automation of uncomplicated inquiries and instructions. Hence, RPA should be user-friendly and beneficial to both recruiters and applicants. The systems should be highly efficient, increasing applicant involvement and experience. RPA technology inspection improves the best match of applicant recruiting without sacrificing quality.

II. ANALYSIS

3 INTRODUCTION

The following section of the thesis will concentrate on internal and external analyses of the Infosys company and its activities. To improve HRM and overall operational productivity for Infosys, the researcher will examine barriers to effective communication and develop the "self-service desk" application. The difficulties and potential improvements of the firm and its employees toward process automation are addressed in the following chapter, along with an analysis of current information systems.

3.1 Company profile

Established in 1981 by seven professionals, Infosys Limited is a multinational corporation that provides business consulting, information technology, and outsourcing services. From the beginning, the company targeted the importance of expanding its activities on overseas business. From a capital of US $250, Infosys has grown to become one of the largest IT companies in India and worldwide. Nowadays, it has a global presence in over 46 countries with over 346k employees and was recognized as the fastest-growing IT services brand by Brand Finance, the world's leading brand valuation firm, in its Global 500, 2022 report.

Infosys offers its clients a wide range of services, including application development and maintenance, independent validation services, infrastructure management, digital services, and consulting. The corporation engages in several industries: banking, financial services, insurance, healthcare, life sciences, manufacturing, energy, utilities, communications, and media.

Infosys Ltd has also been rated a noteworthy employer in various worldwide HR surveys in recent years. The organization is well-known in the sector for its employee-friendly HR practices. Since 2006, the firm has successfully attracted outstanding talent from around the world and hired professionals through a meticulous selection procedure. The accepted applicants were also expected to undergo a rigorous 14-week training program and continue training each year (Infosys Ltd, 2023).

It has received multiple awards for its contribution to corporate social responsibility, including the Golden Peacock Award and the Dow Jones Sustainability Index. Many organizations and media have similarly acknowledged the corporation for its innovation, technology, and leadership excellence (Infosys Ltd, 2023).

Infosys opened its first European branch in Brno in the early 2000s and has expanded significantly since then. The Brno center offers global corporations business consulting, technology, engineering,

and outsourcing services. The clients are industry leaders in industries such as automobile and sportswear manufacturing, energy and utilities, pharmacy and healthcare, to name a few. It's worth mentioning that one of Infosys' first clients was the US-based sports shoe manufacturer Reebok, this shows how diverse the company's current clientele has become.

The graph below illustrates Infosys' growth from 2010 to 2022. It is also worth noting that 84,782 of the staff are recent college grads who have been hired globally.

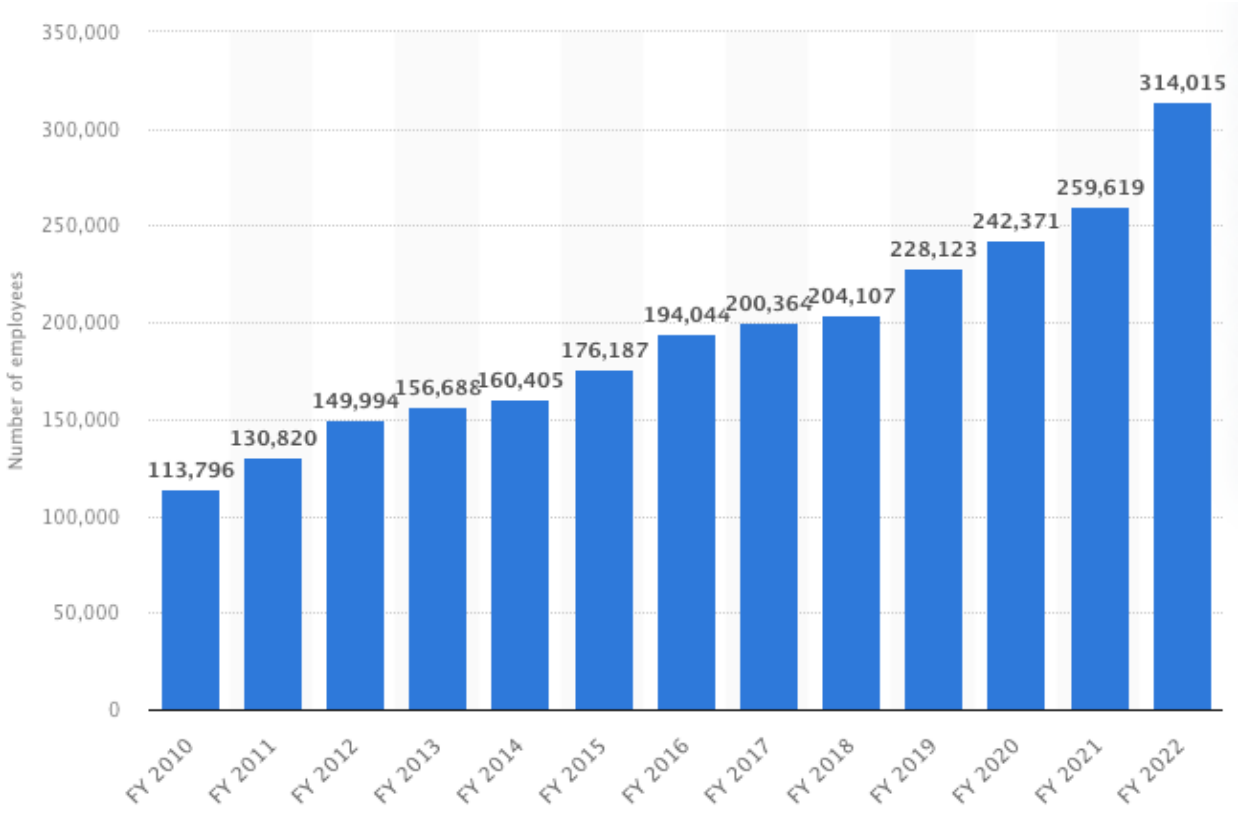


Figure 7 Infosys employee count from 2010 to 2022 (Statista, 2022)

According to the corporation, one of its most important values is its staff members. Over 90 countries are represented among the staff, each bringing their skills to the table. This tolerance for other cultures improves the life of the workers, and all employee surveys show that Brno employees love their teams and team spirit above everything else.

The Brno center also has a unique Learning and Development section that supports employees in upskilling and provides new opportunities. They have a varied workforce that includes recent graduates as well as qualified experts with substantial industry experience. As a result, this study aligns with the company's aims and beliefs.

Figure 8 Displayed feature of Infosys BPM (Infosys BPM, 2023)

3.1.1 PESTLE Analysis

PESTLE analysis explores external macro-environmental elements that may impact a company's business operations and strategy (Tavana, 2017). The next portion of the study comprises the PESTLE Analysis for the Infosys BPM branch in Brno. The analysis will examine the following external factors: political, economic, social, technological, legal, and environmental.

Besides competitive pressures, PESTLE research gives significant depth regarding operating issues Infosys BPM may confront in the macro environment. For example, an industry may be highly profitable, but it will only benefit Infosys Limited if it is located in a secure political climate. Thus, macro-environmental elements affect how the firm strives to grow and influence strategic planning.

Political Factors:

- The political environment in the Czech Republic is generally stable, with a multi-party system and a democratic government.
- A favorable business environment with low taxes and incentives for foreign investors aimed to promote economic growth.
- Strong government support for the IT industry, including funding for research and development.
- Changes in government policies on immigration and work visas may impact the availability of talent and the cost of labor for Infosys.

Economic Factors:

- Economic growth in the Czech Republic, with a GDP growth rate of 3.5% in 2021. (World Bank, 2022).
- Highly skilled and educated workforce with a strong focus on science and technology.

- Competitive labor costs compared to some other European countries.
- Exchange rate fluctuations may impact the cost of doing business for Infosys.

Sociocultural Factors:

- There is a high standard of living and quality of life in Brno.
- Brno and nearby areas have a diverse and multilingual population, which creates an effective environment for Infosys to attract and recruit skilled professionals.
- The city has a rich history and culture, with a high emphasis on education and innovation.
- Increasing demand for IT services and solutions in the region.

Technological Factors:

- The Czech Republic has a well-developed technology industry, with a large number of tech startups and an established IT infrastructure.
- Advanced technological infrastructure and facilities in Brno, including high-speed internet and state-of-the-art research centers.
- Strong focus on innovation and research in the IT sector, with a growing number of startups and tech companies in the region.
- Availability of skilled IT professionals and engineers.
- Infosys operates in a rapidly changing technological environment, and the company may need to invest in new technologies and innovations to remain competitive.

Legal Factors:

- Favorable legal environment for businesses in the Czech Republic, with a simple and transparent tax and regulatory system.
- Substantial intellectual property rights and data privacy.
- Infosys must comply with various laws and regulations related to data privacy and security, intellectual property, and employment practices.

Environmental Factors:

- Increasing focus on sustainability and environmental protection in the Czech Republic.

- Infosys may need to implement environmentally sustainable practices in its business operations to comply with environmental regulations and meet stakeholder expectations.
- The company may also face reputational risks related to its environmental impact and sustainability practices.

In conclusion, Infosys BPM operates in favorable business conditions with stable political and legal systems, a strong economy, and a highly qualified workforce. The region strongly focuses on innovation and technological development, with advanced infrastructure and facilities. However, the branch may face challenges related to increased workload for the IT department due to the growing demand for IT services in the region. Additionally, Infosys should consider the increasing focus on sustainability and environmental protection in the region when developing its business strategies. Thus, the company must remain agile and adaptable to changes to respond to external factors that may impact its business operations and strategies.

3.1.2 BCG matrix

The Boston Consulting Group (BCG) matrix is a strategic management tool that supports firms in reviewing their product portfolio and making resource allocation decisions. The matrix categorizes items and services into four groups based on market growth rate and relative market share: Stars, Cash Cows, Question Marks, and Dogs (Alotaibi, 2014).

To create a BCG matrix for Infosys company subsidiary in Brno, it is necessary first to identify its products or services and classify them into thr categories based on their market growth rate and relative market share. The primary services offered by the Brno subsidiary are as follows:

1. IT Consulting
2. App Development & Maintenance
3. Infrastructure Management
4. Business Process Outsourcing (BPO)

The BCG matrix is a simple and effective way to visualize the performance of a company's products or services to make informed decisions about resource allocation and strategic planning.

The below figure shows the classification for the Infosys BPM subsidiary.

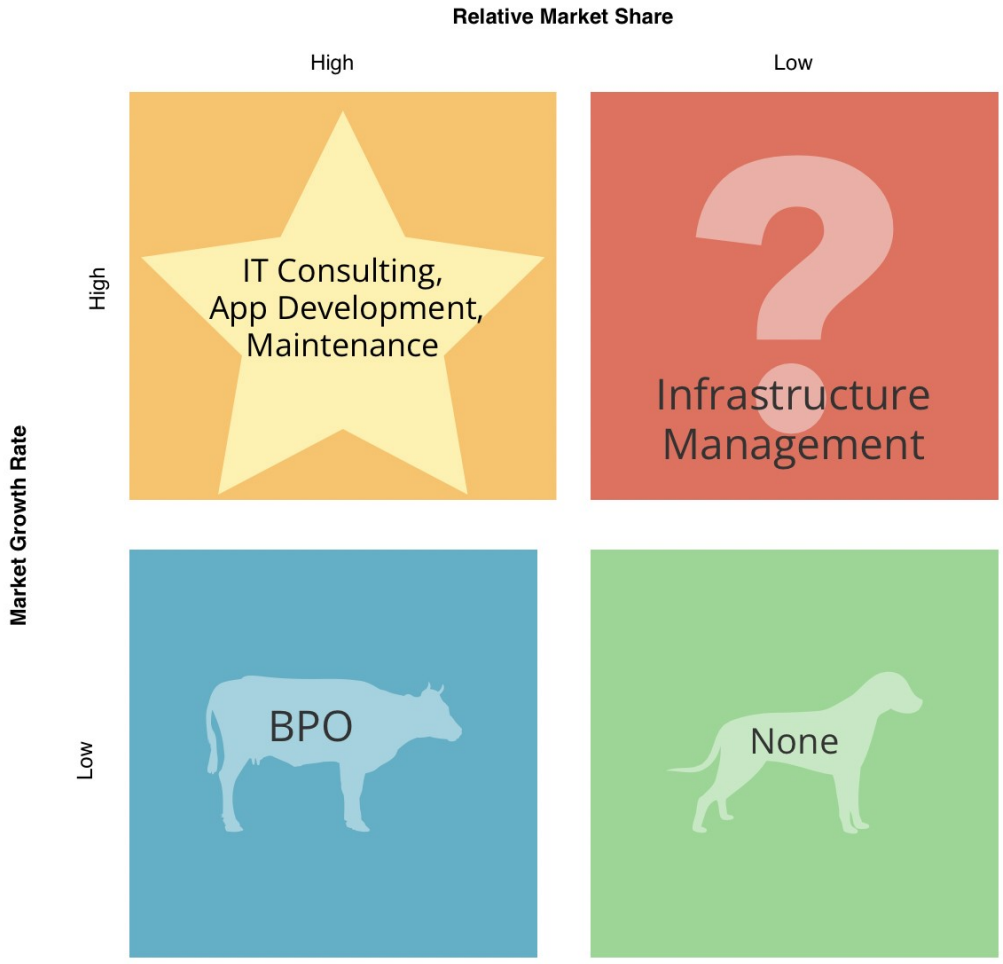


Figure 9 BCG Matrix for the activities in Brno Subsidiary (own processing)

As shown in the figure, existing products/services can be divided into four categories:

Stars (high market growth rate, high relative market share): IT Consulting and Application Development and Maintenance have a high market growth rate and a comparatively high market share. These items have a strong potential for generating substantial revenue and profit for the firm.

Cash cows (low market growth rate, high relative market share): Infrastructure Management has a low market growth rate but a comparatively large market share. The service is reliable and provides the organization with a constant income stream.

Question Marks (rapid market expansion, low relative market share): Business Process Outsourcing is a fast-growing market, yet a small currently has a smaller market share. It has the potential for development but will require further investment and strategic planning to gain market share.

Dogs (low market growth rate, low relative market share): None of the products/services offered by the Brno subsidiary seem to fall into this category.

To summarize, the Brno subsidiary has a diversified range of market-positioned products/services. IT Consulting and Application Development and Maintenance are predicted to expand quickly and provide considerable income and profit, while Infrastructure Management products are stable and generate a continuous revenue stream. The Business Process Outsourcing product has the potential for development, but increasing market share will require further investment and strategic planning.

3.2 Main factors and information systems used in HRM

Organization, as Tavana (2017) emphasizes, is made up of four resources. In other terms, the 4M which include men, money, material, and machinery. These are the foundational elements of every organization. All of these resources are the backbone for the organization's growth.

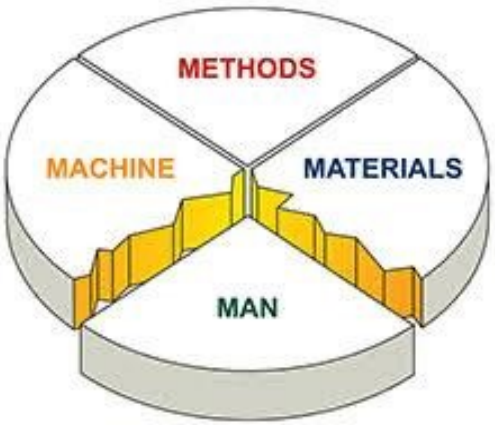


Figure 10 Concept of 4M in Management (Mallon, 2015)

It was previously stated that, according to Bleistein (2017), in today's knowledge economy, the success of enterprises is mainly determined by the performance of their human resources. Hence, the organization needs to efficiently use existing resources to fulfill its objectives. Electronic human resource management, or e-HRM, is one of the notable volitional and cohesive approaches to managing an organization's most valuable assets - the people who work there and contribute individually and collectively to fulfilling the company's success.

Such procedures should be directly tied to the entire strategy of the organization, and Infosys management is fully aware of it. Its founders envision the company's HR procedures, and that culture has prevailed over the years. The corporation views its personnel as a fixed asset and values their

longevity by providing continual new training. Infosys was also one of the first firms to provide its workers with world-class training and working conditions. Employees are encouraged to share their learning experiences and provide feedback (Infosys Limited, 2004).

Therefore, to evaluate the existing operational process between branches and HR personnel, the characteristics of current HRM automation systems and the problems that may impede the company's progress will be addressed.

3.2.1 Detailed description of current practices of E-HRM

Enterprises and industry professionals often classify E-HRM into three groups. The three kinds are as follows:

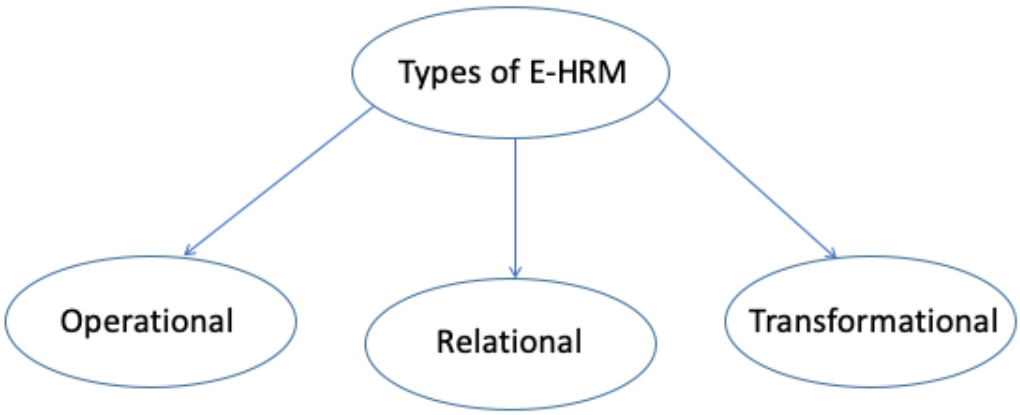


Figure 11 Types of E-HRM

Sources: Created by Author (Adopted from Aluvala, 2017)

The three types are as follows:

- Operational e-HRM is primarily concerned with HR operational activities such as payroll, employee personal data, and so on.
- Relational e-HRM is focused on assisting business operations such as training, recruiting, and selection procedures.
- Meanwhile, the transformational type is centered around HR strategies and activities like knowledge management and strategic orientation.

The primary HRM activities performed electronically at Infosys BPM include recruitment, selection, training, performance management, and compensation. The procedures are described in full below.

Recruitment

Recruiting and hiring talent is one of the primary problems for organizations vying for talent in the global market. Nevertheless, with each available position garnering hundreds of applications, it has become difficult for HR managers to filter through all the applications and choose the best individuals. Screening individuals from the application pool is the most challenging component of the recruiting process, according to 52% of recruitment and talent acquisition professionals. (Infosys BPM, 2022).

Furthermore, recruitment may become more efficient and productive if the company can automate the screening stage and other repetitive duties in the employment process. This is where e-recruitment, artificial intelligence (AI), and information systems in human resource management enter the picture, allowing recruiters to disengage from repetitive screening chores and focus on hiring the finest candidates.

E-recruiting refers to using the internet as a recruitment tool, such as corporate websites, specialty websites, or online advertisements. According to studies conducted over the years, most respondents favored the benefits of e-recruitment in terms of applicant quality, options for the candidates, time, and cost savings.

Table 1 The differences between conventional and e-recruitment process
(own processing on the base of Bleistein (2017)

Recruitment process	Conventional recruitment	E-recruitment
Seeking Candidates	Using non-technologically assisted resources, such as marketing flyers and employment fairs. Similarly, spokespersons or recruitment events should be held to attract as many applicants as possible who are interested in contacting the organization.	Using the organization's reputation, product image, and other strategies in order to attract as many people as possible to the company's websites. Enterprises can present themselves there.
Screening applications	Choosing paper-based tests for	Using sophisticated,

	applicants to generate a reasonable applicant pool.	standardized online assessments to screen candidates and narrow the number of candidates to a reasonable quantity.
Establishing contact	Making phone calls to the selected applicants and undertaking in-person interviews.	Utilizing an automated recruiting management system to contact the most suitable prospect as quickly and efficiently as possible prior to them being hired by some other organization.
Hiring the chosen candidate	Making the phone call and arranging the meeting to sign the contract.	Making the phone call or emailing the candidate, negotiating certain terms if necessary, and scheduling the final meeting to complete the agreement. If the employee is from another state or city, the contract can be signed remotely using e-signature.

Selection

E-selection, as previously indicated, follows after e-recruitment. E-selection entails selecting suitable profiles from among the available applicants. It is the process of hiring new employees in a company through various channels such as online exams, interviews, reference checks, and final interviews with particular team members.

Infosys makes a significant effort to identify qualified individuals while hiring new staff. Infosys uses a Recruitment Management System (RMS), which includes modules for individuals that applied

directly, employee recommendations, staffing firms that offered the profiles of prospective candidates, and applications filed by campus placement coordinators.

The e-selection generally consists of two methods: ability testing and personality testing. Professional competence and academic proficiency are two traits Infosys looks for in a candidate. Analytical ability, collaboration, leadership potential, communication and creativity abilities, and a practical and disciplined approach to problem resolution are all noteworthy. Those with a high degree of "learnability" are given extra consideration. Learnability, in this case, refers to drawing and applying generic information from specific experiences (Infosys Limited, 2021).

The selection panel evaluates how each ability included in the candidate requirements should be evaluated. The methodology will be determined by the nature of the role, which may include Panel interviews, presentations, testing, in-tray activities, group exercises/discussions, and so on.

Tests used in the procedure are made available to the interview panel before the decision-making process. Each candidate's abilities should be evaluated in relation to the person's requirements. Professional and personal development may be prioritized. The Human Resources Department should preserve a summary and record of all panel interview decisions made on each candidate.

The post-selection phase is associated with communication with the chosen applicant. If the candidate declines the offer after discussions and other candidates are judged appropriate by the panel using the same selection criteria, offer the position to the next most qualified prospect. It is also crucial to communicate with all rejected candidates as soon as possible and to offer feedback within two days.

Training and e-learning

Training often involves teaching operational or technical staff how to accomplish the job for which they were employed. E-training and e-learning improve employees' knowledge, skills, and abilities. Employee knowledge and skills are improved in Infosys by applying various e-training strategies such as online coaching, professional courses, and mentoring, which raises employee satisfaction.

Infosys' training and development activities aim not only to improve workers' abilities and work performance, but also to enable individuals to grow inside the organization. Moreover, the provided training helps to shorten personnel's learning period starting a new job or transferring and becoming competent swiftly.

Another vital aspect to highlight is that at Infosys, employee training is continuous. As newcomers join Infosys, they undergo introductory training workshops on corporate policy and general standards. They are being educated on new procedures and technology at the time. As they advance in rank, they will be taught project management and sent to management and leadership development programs.

Due to its ongoing company development and gradual move toward the consultancy industry, management and leadership abilities have also grown increasingly crucial for Infosys. As the number of projects to be completed has grown, so has the requirement for project management abilities in goal planning, communication, coaching, delegation, and team management. Technical individuals are almost always chosen to advance to managerial positions. In some respects, this option is paradoxical because the greater an individual's technical talents (such as programming code), the more likely he or she is to be transferred away from utilizing technical competence and onto a management track that requires management experience. Infosys also emphasizes the board and authority advancement program as necessary and meets the requirements of executive development for its senior representatives and chiefs (Infosys Limited, 2023).

3.2.2 Performance appraisal and management

A performance appraisal is a component of career development management. "It is the process of gathering, analyzing, and documenting information regarding an employee's relative value to the business." (Bridger, 2018). According to Bleistein (2017), performance evaluation is an act of appreciating an employee's triumphs or failings; it judges an employee's personal qualities and shortcomings and suitability for promotion or additional training.

In most organizations, the following are the primary goals of performance evaluation:

- ➢ To examine the performance of the employees throughout time.
- ➢ To make a comparison between actual and desired performance.
- ➢ To assist management in stabilizing administrative control.
- ➢ To strengthen the interaction and communication between superiors and subordinates and between management and employees throughout the management process.
- ➢ Identify individuals' and groups' strengths and shortcomings to determine training and development requirements.
- ➢ To offer feedback to employees based on their previous performance.

- To adjudicate the effectiveness of the organization's other human resources functions, such as recruiting, selection, training, and development.

At Infosys, the first stage of performance appraisal is an analysis of personal skills for the responsibilities assigned to an employee throughout the appraisal period. Several aspects are considered while evaluating performance, including timeliness, the quality of work produced by the individual, customer satisfaction, peer satisfaction, and business potential. Personal talents such as learning and analytical ability, communication skills, decision-making, change management, and planning and organizational abilities are also examined in employees. Each of these attributes is rated on a scale of 1 to 5. (with one signifying above the expected performance level and five below the expected performance level).

In recent years, Infosys Ltd also has started conducting performance evaluations every six months. All personnel are being subjected to a 360-degree evaluation. Peers, direct bosses, subordinates, and consumers must provide feedback. At least six to seven assessment reports are gathered for each employee, all completed online, and the data is stored in a single database. 360-degree evaluation is based on horizontal and vertical assessments of an individual's management talents, competencies, and behavior by colleagues or team members. The main objectives are presented in below figure:

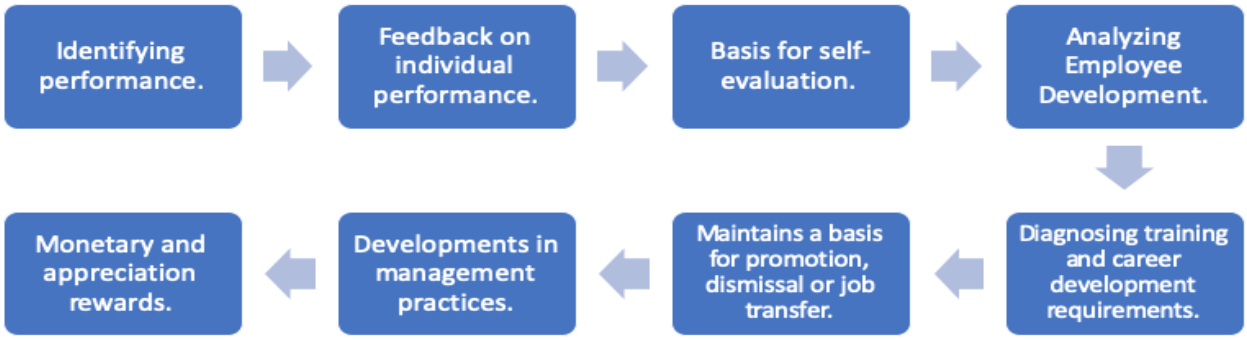


Figure 12 The objectives of 360 Degree Performance appraisal *(own processing)*

Similarly, the performance management method is adjusted to the demands of each employee. Rather than comparing people, the emphasis is on recognizing the most outstanding performers versus performance standards. This approach aids in identifying the performers by utilizing well-defined, always-relevant goals, constant feedback, and a strong emphasis on employee development.

Ongoing feedback is also an essential part of the process, with frequent reviews concluding in a rating-based assessment of the employee's performance. With Infosys' ongoing approach, performance interactions between employees and management occur regularly. The continuous

feedback approach enables managers to offer immediate feedback on needed changes in their job. If employees continue to fall short of expectations, they are identified for a structured performance improvement plan in which they are assigned goals, and supervisors help them reach those goals. Employees receive the performance rating at the end of the performance cycle (Infosys Limited, 2023).

To help with the process, the company designed a portal called iCount, where employees are able to set their goals and to report their progress toward those goals periodically. Managers should offer feedback to staff on these objectives and help them achieve them. Managers create development objectives for employees to help them advance in their careers. In addition, employees may seek and share feedback with their coworkers. As a result, iCount goes a long way toward providing a comprehensive snapshot of employee performance (Infosys Limited, 2022).

The 5C Employee Engagement Framework employed by Infosys is portrayed in the figure below. According to top leadership, the framework helps to generate best-in-class employee experiences and encourages individuals to stay motivated to do their best at all times.

Figure 13 The 5C Employee Engagement Framework (Infosys Limited, 2022)

3.2.3 Challenges in HR practices

In recent years, Infosys has been challenged to combine employee engagement and productivity efficiently. Active participation increases productivity; nonetheless, there is also a staff burnout risk. Thus, HR units scramble to devise new engagement and productivity strategies for remote workers. The most effective solutions will combine increasing reliance on technology with a humanistic

approach to management, strengthening individuals in difficult times and assisting organizations in the long run.

The novelty of working from home during the pandemic phase has worn off by 2023. Although employees now have the flexibility they seek, they still deal with health and well-being challenges, childcare and education issues, and blurred work-life boundaries. Similarly, employers have overcome the initial implementation challenge of remote work at scale and are now addressing maintenance and long-term strategies. The most pressing HR concerns include boosting teamwork and communication, sustaining productivity, and enhancing employee engagement. (Shankar et al., 2020)

Productivity

Remote working has increased productivity, particularly among knowledge employees. Nevertheless, maintaining this high production level is difficult for both employers and staff members. The initial hurdle for the organization was to evaluate the question of sustaining productivity. Most of the workers had been more productive at home because they had more autonomy, control, and flexibility over what they conducted. The hybrid mode of work is currently actively advocated, as high-touch, collaborative approach will benefit managers and the staff.

However, if burnout sets in, productivity may suffer, and remote working members may feel more alienated, posing problems to teamwork and a shared sense of purpose. Not feeling like a team member negatively influences productivity, especially regarding new ideas and inventions. Managers must modify their approach to handle these concerns and devise engagement techniques considering these new realities of work life.

Besides, long-standing issues about quantifying productivity have been affected by changing working regimens. As a result, many businesses have increased the adoption of surveillance tools to track, for example, keystrokes and time spent on applications. Workers, in turn, feel that they are being micromanaged and not trusted.

Engagement and communication issues

Although productivity may be front of mind in the short term, monitoring employee engagement is Infosys's long-term priority. Employee engagement, or the drive to execute one's work well and dedication to the business, boosts loyalty, and productivity.

Companies have long been concerned that remote personnel are less engaged. These concerns appeared justified: research published in Harvard Business Review before the epidemic discovered that more than two-thirds of remote workers are not interested in their work (Shankar et al., 2020). On the other hand, the pandemic has demonstrated that traditional thinking about remote employee engagement may be incorrect—remote workers are engaged. Increased productivity levels are indicative of interaction, as engagement boosts productivity.

Of course, the lockdowns produced a unique work situation. Suddenly, the entire workforce at Infosys and practically everywhere else became remote; it was not simply a few individuals here and there. For cooperation and communication, all workers were on an equal playing field. Employees had a different experience across home and workplace prior to hybrid remote settings. Furthermore, individuals who switched to remote work had already established ties and relationships in the office. (Infosys Limited, 2022).

The problem is retaining the coherence and relational ties, especially since Infosys intends to have employees return to the office or implement a hybrid working structure when new employees are hired. The types of relationships that drive engagement are now entirely virtual, which causes reduction of impromptu brainstorming sessions, and the chance of having casual friendships that can frequently be found in an office setting. Face-to-face meetings with management and mentorship, which make employees feel appreciated, are no longer available at the same level as pre-pandemic.

These productivity and engagement concerns highlight the tensions between scientific and humanistic management methods exacerbated by the pandemic. Scientific techniques focus on procedures and products, such as allocating points to reviews. The humanistic side is concerned with "taming" the negative impacts of measuring productivity and caring for people so that they feel supported, connected, and engaged. As a result, the HR department attempts to discover methods to harmonize both techniques, rely more heavily on one or the other, or develop alternative alternatives.

3.3 Analysis of the company's existing information systems

Employees expect truly immersive, intuitive, and seamless working experiences in this digital age. Employee experience has emerged as a vital aspect of the effective running of enterprises, particularly in the aftermath of the COVID-19 pandemic, as previously stated.

With an exponential surge in digital nomads in the post-pandemic world and Infosys being a huge international organization, there is a need to gear up and deliver human-centric digital workplace

experiences for employees to maximize on-premise capabilities and remote workers. Infosys is already in the process of shifting from a productivity-centric to an experience-centric working paradigm by building individualized immersive working environments that boost employee engagement.

Attempting to change the employee experience at big corporation of over 314,000 individuals dispersed across 50+ countries is only achievable with continuous upgrades and advancements in technology deployed. As in the past, the company's own suite of technologies is recommended for the transition. Some of the applications and digital systems that improve employee experience in the company are specified below.

3.3.1 Onboarding experience

It is a common belief that the first impression lasts. Consequently, Infosys has prioritized improving the onboarding process. Launchpad was one of the first app-based platforms designed for the newly hired employees. The tool was created to interact and engage with candidates between accepting a job offer and commencing employment for the organization. The mobile app provides a guided flow that supports workers in accepting their offer, commencing their onboarding process, and completing all essential documents and data changes prior to their start date.

Prior to the launch of the Launchpad platform, onboarding was a time-consuming procedure that required workers to provide several papers and usually involved extended wait times for physical document verification and submission. Meanwhile, Launchpad was critical in onboarding new hires in India, particularly during the lockdown period in 2020.

Considering the above, Launchpad will be one of the prototypes for the 'self-service' desk proposal, and the latter will be available at all branches. At the present time, Infosys Launchpad is only available to employees hired in Australia, India, UK, and the United States. As a result, the onboarding process at Infosys BPM in Brno is still done in the old-fashioned paper-based way, making the first days a blur of operational activities for both new joiners and responsible HR staff.

The goal is to eliminate the need for physical documents for all branches, beginning with the one in Brno, by allowing soft copies and digital acceptances and laying the groundwork for a virtual onboarding. Employees will have a more meaningful and immersive experience with managers, teams, and HR from the first day because all operational processes have been completed prior to their arrival.

3.3.2 Health Assessment & Lifestyle Enrichment

The well-being journey at Infosys spans two decades and, as previously said, lies at the heart of the company's culture.

HALE is a well-known employee engagement tool that focuses on employee health (both physical and mental) and safety, promoting leisure, and developing and keeping a healthy and productive team. The four pillars of the HALE journey are as follows:

Figure 14 The Pillars of HALE (Infosys Limited, 2022)

Emotional well-being: Moving from a physical to a digital mode, especially when dealing with mental health difficulties, required extreme caution and assistance. Wellness coaches are available to workers 24 hours a day, seven days a week, by the HR department. The Samaritans peer-to-peer counseling network caters to employees and provides a safe area for talks. Weekly webinars and talks led by professionals in the emotional well-being field, mindfulness workshops, and worldwide solid HALE efforts ensure their emotional well-being is taken care of.

Physical well-being is also a significant focus area for Infosys. They have introduced various well-being programs for employees worldwide over the last two years, including sessions with specialists on mental health, self-care, and women's health and seminars on prioritizing work-life balance. They have digitized their employee well-being product in order to improve employee reach and experience. A virtual GP service was also established for European branches, allowing employees to arrange video consultations without traveling.

Social well-being: The HR department strives to offer chances for work-life balance and to assist staff members in living a whole and varied existence. They hold many leisure events under this pillar to appeal to their interests, hobbies, and lifestyle. Among the strategies that encourage work-life balance are: extended maternity leaves; personal sabbaticals; community service sabbaticals; higher education sabbaticals; and adoption leave.

3.3.3 Employee satisfaction

Infosys has sophisticated procedures in place to evaluate employee mindset and feedback. Employee engagement at Infosys was evaluated using an annual survey - LITMUS - up to fiscal 2020. When the pandemic occurred, the team promptly rebuilt this technology for the new remote work job and incorporated a continuous sensing mechanism called Pulse.

Meanwhile, Pulse is a renewed tool for anonymously capturing ongoing and real-time employee feedback on critical organizational-wide issues that affect an employee's experience at Infosys. The firm polls the whole organization every quarter using a monthly micro survey to get a sense of employees' feelings on the ground. In addition to this ongoing monthly poll, they interview employees on tenure-based milestones and events such as onboarding, job rotation, and appraisals. The sensor design has been improved due to this cumulative understanding of employee perception and input from actual events and milestones.

To drive change throughout the organization, all managers have access to a real-time customizable dashboard that includes input from their teams, allowing them to engage their employees better and handle any concerns. The dashboard contains numerous views and advanced analytics such as heatmaps, trendlines, and sentiment analytics to assist managers in selecting priority areas depending on their teams. Managers work with the HR departments and leadership of their respective units to execute changes or improvements at the unit/team level on the ground.

It is worth noting that approximately 50,000 workers took part in the last survey in 2022 for Q4, with insights gained around numerous organizational issues. These insights have led to the creation of quarterly focal areas for action, which are shared with the leadership, and the progress is reported regularly.

3.4 Summary of analysis

At the beginning of the study, PESTLE and BCG analyses were executed to understand the company's profile, the areas in which it operates, and whether the environment is conducive to project implementation. Clearly, the subsidiary in Brno is in good hands, with stable political and legal systems and a highly qualified workforce. At the same time, the BCG matrix showed that the Brno Center has a diverse range of market-positioned products and services. It also demonstrated that the company's portfolio is suitable for developing the application without outsourcing. Moreover, as the

planned Self-Service app falls within the scope of the company's current business activities, it will be easier to offer it to clients.

After that, an internal process analysis was performed to better understand the company's internal environment. The HR department was the main focus of the process analysis. The analysis was carried out on the following activities:

- Recruitment and selection process
- The employee onboarding process
- Employee Engagement
- Performance management and evaluation

To demonstrate which issues are intended to be addressed by the new project, the analysis provides more specific challenges visible in HR practices, such as balancing employee engagement and productivity, particularly in remote work. The company is attempting to develop new engagement and productivity strategies that will work well for remote workers while balancing scientific and humanistic management approaches.

The analysis shows that the company has a well-known employee engagement tool that focuses on employee health (both physical and mental) and safety, promoting leisure, and developing and maintaining a healthy and productive team. The used personnel satisfaction surveys are also included in the study, which is used to assess employee mindset and feedback. Pulse is a current tool that is still being improved.

In the internal analysis for the onboarding process, it is remarked that Infosys has a handy app-based platform called Launchpad that has received positive user feedback. The platform's limitation is its restricted accessibility; currently, the platform is only available to branches in select locations such as the United States and India. The new self-service desk will use some of the platform's features to create an inclusive platform for Infosys subsidiaries worldwide.

The new app will incorporate features and functionalities from both Pulse and Launchpad. The plan, however, is to make it more personalized and practical. Furthermore, having these different information systems and interfaces makes it less convenient for employees. The plan is to have most of them on a single, easily accessible platform.

Another information system that will be used as a prototype is Icount, which the company uses to assess whether employees have reached specific goals. It is suggested that the assessment include

feedback from client stakeholders and colleagues. The current app is only two-sided, with employees and managers on opposite sides. It also does not provide the option to provide feedback on managers.

To summarize, the following are the primary goals to be achieved as a result of the analysis:

- make an inclusive platform for all branches of the company
- less generic surveys and personalized performance appraisals
- feedback on both sides and include coworkers to increase team spirit
- flexible, user-friendly app-based platform with a simple interface
- reduced paperwork, and accessibility for the fully remote or hybrid system.

4 PROPOSAL TO DEVELOP THE "SELF-SERVICE" DESK APPLICATION

This project is aimed to improve communication between the HR department in Brno and its employees and automate the work of all branches in the long run. This might be attained by evaluating how the organization runs, what information systems and apps are utilized, and how HR departments generally complete daily paperwork and other duties. The design, application display, and other elements will also be discussed.

The proposal will include the SWOT analysis as part of the targeted approach to addressing the project's objectives and ensuring its future success. The method will be used to examine the external and internal factors that influence the organization and its key business activities.

Additionally, the project will consider risk and cost analysis in order to analyze the potential downsides associated with the adjustments and to determine the approximate time required for the development and testing phase. Eventually, the proposal will be concluded with an overall appraisal.

4.1 Development of inclusive ‘self-service’ desk system

The concept behind the "self-service" desk is to offer human resources technology that allows staff members to address their HR demands electronically and autonomously. The tool will allow employees to conveniently accomplish job-related tasks such as changing personal information, obtaining business benefits information, verifying leave/day off availability, and keeping track of leave balances. It would also contain functionality for handling employee salary-related factors, such as filing Income Tax declarations and making payslips and Tax Sheets available. The program, which will serve as a workforce management solution for various activities, will be a handy tool to enhance overall efficiency for the corporation and team and accelerate vital personnel information and data in a single database.

The application is suggested to be named "Infoscion." Employees use informal "Infoscions" or "Infyites" nicknames to refer to themselves and their coworkers within the corporation. There is even a famous catchphrase among ex-employees who want to stay in touch and maintain the vital relationships they formed while working— the acclaimed phrase "Once an Infoscion, always an Infoscion" is ingrained in Infosys culture.

The name "Infoscion" will demonstrate, first and foremost, that technology is not intended to replace staff members but rather to simplify their day-to-day duties. Furthermore, it will be easily remembered, showing the connection with the company's brand, vision, and inner culture. The

application will include a user-friendly interface, a centralized employee information database, modules for HR tasks and functions, and security protocols to protect employee data.

4.1.1 Project realization steps

Developing and implementing a new self-service desk in Infosys Subsidiary in Brno will necessitate a comprehensive plan and assigning responsibilities to staff members to ensure the project is processed efficiently and effectively. Here are the steps, as well as the staff members' respective roles and responsibilities:

1. Defining the Project Scope and Objectives: The first step is to define the project's scope and objectives, which include defining the features of the self-service desk, its functionality, and its expected benefits. The Project Manager will lead this step and assign staff members to assist in defining the scope and objectives. The author was part of the team that defined the specific benefits the application would provide to the company, specifically to the HR department.
2. Conduct a Needs Assessment: The second step is to conduct a needs assessment to understand the current system's strengths and weaknesses and to gather data on what is needed to be changed in current systems. The Business Analyst will lead this step, and the Project Manager will assign staff members to gather data.
3. Create a Timeline: The third step is to create a project plan and timeline that outlines the project's tasks, milestones, and deadlines. This step will be led by the Project Manager, who will assign staff members to assist in developing the plan and timeline.
4. Design and Development: The fourth step is to design and develop the new self-service desk based on the needs assessment and project plan. The Technical Lead will lead this step, and the Project Manager will assign staff members to assist in developing the self-service desk. The author was heavily involved in this process step, explicitly designing the app's display layout and user interface.
5. Testing and Quality Assurance: The fifth step is testing and quality assurance to ensure the self-service desk meets the requirements and functions. The Quality Assurance Lead will lead this step, and the Project Manager will assign staff members to assist with testing and quality assurance.
6. Implementation and Deployment: The sixth step is to put the new self-service desk into production. The Deployment Lead will lead this step, and the Project Manager will assign

staff members to assist in the process of the pilot app implementation. This project stage will also include communicating with employees and providing training on using the system correctly.

7. Maintenance Support: The last step is to provide post-implementation support to ensure that the self-service desk is operating correctly and address any issues or concerns. The Technical Support Team will lead this step, and the Project Manager will assign staff members to help with support.

In conclusion, developing and implementing the new self-service desk in Infosys Company in Brno can be accomplished smoothly and effectively by following these steps and assigning responsibilities to staff members. Each team member should provide regular updates on their progress and collaborate to ensure that the self-service desk is developed and implemented successfully. The Responsible Project Manager will supervise the entire project and ensure all tasks are completed on time and on budget.

4.1.2 Benefits and objectives of the 'self-service' desk

As with any new software deployment, the organization must comprehend the entire spectrum of benefits it may provide. Therefore, the study will explore the primary advantages the management can expect to see impacting their workforce.

Enhanced Employee Engagement

For starters, the self-service desk will boost employee engagement by giving employees more control over their HR information and allowing them to conduct HR activities independently.

Consider the following scenario: a dedicated employee requests Paid Time Off (PTO) ahead of their scheduled days. They wait a few days for permission but do not hear anything. Meanwhile, the individual observes airline prices rise and gets concerned that their planned trip is beginning to deviate from their budget. They write to the HR department once again, only to learn that the original PTO request was overlooked. The time request is finally allowed, but the aggravation between the submission and the acceptance can not be undone, resulting in a negative employee experience.

The Infoscion helpdesk will assist the teams in avoiding communication gaps by establishing a dependable procedure for resolving similar basic employee queries. As a consequence, the HR department will prevent unpleasant oversights that can have a significant negative impact on

employee morale and engagement. Loyal workers are engaged employees, but it only takes one or two missteps to take away that engagement and excitement. After all, the perks provided by the employer are a big part of why they took the job in the first place. They should not have to struggle or be concerned about getting them.

Improved Productivity

The self-service desk will allow employees to swiftly find answers to their concerns without needing personal assistance from the HR department. The latter will cut response time for requests and allow staff to focus on their work without interruptions.HR self-service tool is going to improve HR operations by removing manual data input and lowering the need for HR personnel support, allowing firms to complete HR-related activities more quickly and efficiently.

It is necessary to emphasize that management's goal should always focus on talent management and ensuring workers feel like their job counts. Routine HR administrative tasks consume time and energy, which might be spent more productively elsewhere. With a self-service solution in place, employees with HR responsibilities will have more time to focus on things like strategic HR initiatives, hiring, and training.

Infoscion helpdesk software will include a searchable knowledge database, allowing employees to seek answers before contacting HR. It will save time and reduce inbox clutter, allowing the organization to swiftly disseminate essential information regarding salary, policy, and perks to the whole staff, which everyone in every department will appreciate.

24/7 Support

Another significant advantage of the Infoscion helpdesk is that the software is going to be accessible 24 hours a day, seven days a week. A self-service desk will assist employees around the clock, regardless of location or time zone. It will guarantee that workers can access HR help whenever needed and access their data from their desktops, laptop, tablet, or smartphone at any time.

Most staff members anticipate mobile accommodations where they can log in with a username and get what they need quickly and efficiently. The Infoscion implementation aims to encourage employee and supervisor participation by making it simple for them to complete their requests and duties in small phases.

Personnel can access and print their pay stubs, overtime, and tax forms through a self-service desk. Employees would not have to return to their HR department the next day to view/know specifics about their paychecks or leave data. Employees may take care of their company's demands without taking time away from their responsibilities.

Using an HR self-service portal with 24/7 access is also becoming increasingly crucial for the HR department since the team in Brno is continually growing, and many team members work remotely or in a hybrid system. No matter where the team is around the world or what time zone they are in, everyone may work when it is convenient for them on the device of their choice. As a result, the solution will improve compliance by ensuring that HR-related tasks and procedures are completed consistently and sufficiently, lowering the risk of compliance-related difficulties.

Improved Data Accuracy and Analytics

The Self-service desk will be able to collect data on various requests made by employees, allowing Infosys to discover prevalent issues and trends. Since regardless of the size of the branch, gathering and preserving data is critical to maintaining a productive and expanding workforce culture.

Rapid access to workers' contact information, work time monitoring, tax filings, pay statements, and other performance information through a self-service portal prevents things from slipping through the cracks. When the HR staff uses automation to track data precisely, they know their team members' records will always be up to date. This data may be utilized to improve HR services and prevent future problems. Furthermore, the Infoscion would be not only a system for fine-tuning administrative operations but also a tracking system for some of the most important statistics and data at the center.

The following circumstance can be taken as an example. An HR manager at a branch is surveying all employees utilizing the Infoscion helpdesk. Except for one, all departments have high levels of satisfaction. Curiosity piqued, the manager investigates the tickets administered inside that department and discovers that one of the managers within the department has frequently been making unreasonable requests and has even made some inappropriate remarks in the workplace. If the practice continued, the corporation might have been in considerable trouble. However, the HR manager can handle the issue without naming specific individuals, and team satisfaction will be restored.

In conclusion, the self-service desk in Infosys will be a valuable solution for the organization, enabling employees and managers to access and manage HR-related tasks and information

independently. The branch in Brno will leverage the technology to increase efficiency, improve data accuracy, enhance compliance, and better engage staff members.

4.1.3 SWOT Analysis

The research will include a SWOT analysis in the paragraph that follows. As previously stated, SWOT analysis (or SWOT matrix) is a strategic planning approach used to assist a person or organization identify the project's Strengths, Weaknesses, Opportunities, and Threats.

According to Szelągowski & Berniak-Woźny (2022), a SWOT analysis aims to define the goals of a business initiative or project and determine the internal and external elements that are favorable and unfavorable to accomplishing those goals. Bleistein (2017) additionally points out that Strengths and Weaknesses are typically associated internally, but Opportunities and Threats are frequently tied to environmental placement.

Strategic fit expresses the extent to which the firm's internal environment meets the external environment. Analyzing SWOTs is significant because it may guide the following phases in the planning process to attain the goal. First, decision-makers should examine if the goal is achievable in light of the SWOTs. If the goal is not met, they must choose another goal and restart the procedure (Aluvala, 2017). As the old saying goes, every coin has two sides, and the plan must weigh the benefits and potential drawbacks before the application development.

Along with attempting to improve communication and developing the Infoscion application for the Infosys branch in Brno, the aim is first to examine the "self-service" desk's strengths and weaknesses.

Table 2 Strengths and Weakness of the Infoscion Application (own processing)

Strength	**Weakness**
Simple and user-friendly interface	Private information security
24/7 assistance availability	Additional staff training needed
Reduced workload for HR	Implementation cost
Accuracy in information	Potential technical issues

Time-saving process and convenience	Initial limited functionality
Efficient onboarding procedure	

The indicated points are explained more thoroughly below:

1. Enhanced employee experience: Implementing the Self-Service Desk Application will provide a seamless and easy-to-use platform for the employees to raise queries and complaints, enhancing their overall engagement with the company.
2. Reduced workload for HR: HR department is dealing with much paperwork and a lengthy onboarding process. The team is rapidly expanding and includes members from different nationalities. The application is intended to eliminate some of the workloads mentioned above.
3. Increased efficiency: The app will allow for faster query resolution and reduces the time to handle customer queries.
4. Increased accessibility: Infoscion will provide 24/7 assistance which will make the problem-solving process readily accessible to employees after working hours as well.
5. Accuracy in information: The employees will be the ones to upload and verify the information, making the mistake rate in personal information low. Human error will be less common because of the automation of data management and the reduced paperwork process.

Weaknesses:

1. Initial implementation costs may be high: Implementing a self-service desk application in Infosys may require a significant initial investment in terms of software, hardware, and training.
2. Training may be required for employees to use the new system effectively: Employees may require training to use the new system effectively, which may require additional investment in time and resources.
3. Security concerns: Primarily during the launch period and setting up process, the application will be more vulnerable to cyber-attacks and harmful viruses.
4. Technical issues: Technical glitches may arise during the implementation process, which may cause delays and require additional resources to resolve.

5. Limited functionality: The Infoscion may be unable to handle complex queries or issues requiring human intervention, leading to workers' dissatisfaction.

Similarly, the project implementation is marked by some opportunities and threats, which are presented in the table.

Table 3 Opportunities and Threats of the Infoscion Application (own processing)

Opportunities	**Threats**
Improvements in technological ecosystem	Increased competition
Circumstances causing people to work remotely	Reduced face-to-face interaction
Cost saving in a long-term aspect	Low usage rate among the employees
Analytics and data insights	Risk of job displacement for the HR team
Flexibility in remote and hybrid work system	Increased data breaches or hacking attempts
Competitive advantage for Infosys	

The potential opportunities and threats are clarified below:

1. Improvements in the technological ecosystem: The app's development can cause indirect improvement in other interconnected information systems. It might be integrated with other systems and applications to provide clients with a more comprehensive and efficient customer support experience.
2. Unexpected circumstances: Unexpected causes that prevent individuals from coming to work from the workplace, such as pandemic lockdowns. In a similar occurrence, the company will be completely prepared to resume operations. Furthermore, the software may become extremely popular, as with Microsoft Teams and Zoom during Covid 19.

3. Analytics and data insights: Information obtained through the Self Service Desk Application may be studied to provide insights into users' behavior and preferences, allowing Infosys to improve its services and products.
4. Implementation can lead to cost savings in the long run: Implementing a self-service desk application can lead to cost savings in the long run by reducing the workload of the human resources team, improving the organization's overall efficiency, and reducing the time taken to resolve repetitive tasks.
5. Competitive advantage - Developing the self-service desk application may give Infosys a competitive edge by increasing overall organizational efficiency, resulting in higher customer satisfaction and retention.
6. Provided flexibility - People increasingly prefer flexible working environments over the 9-5 corporate routine. Changes in the working environment and priorities will have a favorable impact on app usage.

Threats:

1. Competition: Other companies may offer similar or better self-service solutions, reducing the demand for developing the new system or the possibility of later offering to the clients.
2. Low usage rate: As individuals' preferences evolve, they may prefer alternative modes of communication or support, reducing the relevance of the Infoscion application.
3. Automation has an indirect danger of triggering reductions in employment. Even though the program is only a tool to help with the workload, it is impossible to predict if particular HR positions will be required in the future from a corporate standpoint.
4. A complete shift to remote work or a hybrid approach may result in losing team spirit and fewer face-to-face interactions across departments.
5. Security concerns: The program may expose the whole technological infrastructure to vulnerabilities such as data breaches, hacker attempts, and the loss of private information.

Overall, the SWOT analysis indicates that an Infoscion self-service solution has the potential to significantly improve efficiency, accuracy, flexibility, and employee satisfaction. However, the system's development and implementation must be carefully managed to address possible flaws and threats while maximizing attainable opportunities. To summarize, despite possible risks and technical flaws, the system's benefits exceed the drawbacks, particularly when management considers the system's diverse long-term prospects.

4.2 Time Analysis of the project

After assessing if a project benefits the company, decomposing the work scope process into smaller tasks and allocating responsibilities is essential. As a result, the amount of time required to accomplish all project activities and the projected timetable will be determined. In light of this, a time analysis will be conducted to demonstrate the needed timeline for the project's realization.

The most effective approaches for project time analysis are the Program evaluation and review technique (PERT) and the Critical path method (CPM). PERT and CPM offer tools to plan, schedule, and control projects by identifying key activities, defining the sequence of tasks, and predicting the time necessary to complete the project.

The PERT approach will calculate the time required to build and implement the Infoscion app for regular HR operations and the crucial route to a successful project setup.

Meanwhile, CPM estimates the critical path, the most extended series of activities that must be done to complete the project on time, using a forward pass and a backward pass. The critical path indicates how much time is needed to accomplish the project in the shortest period of time.

The PERT approach begins with identifying project tasks and the sequence in which they must be done. Some tasks can be completed concurrently, while others can only be completed once one or more prior tasks are completed.

- the optimistic time
- the most likely time
- the pessimistic time

The expected time for each task is then calculated using a weighted average of these three estimates.

The below table showcases the main activities needed to be executed with their predecessors.

Table 4 Activities supporting the developing and implementation of the Infoscion app

Task	Description	Immediate predecessors	Completion time (Weeks)
A	Submitting a proposal to the top management of the Infosys company	---	2

B	Arranging a meeting wit the management of th branch for approval	A	1
C	Choosing the staff members who will work on the project	B	3
D	Dividing the roles and exact tasks between the staff members	C	1
E	Further developing and identifying the main goals and objectives of the application	C	3
F	Developing an operational budget	E, D	4
G	Establishing the timeframe of the app development	F	1
H	Determining the main functions and interface design	F	5
I	Confirming all the aspects of the functionalities with HR and IT department	G	2
J	Creating the pilot	H	8

	version of the application		
K	Implementing the pilot version and trying it in the Brno subsidiary	J	2
L	Analyzing the technical issues after the launch	J	2
M	Reapplying security measures and fixing technical bugs from the pilot app	L, I	4
N	Training the stuff on how to operate with the application	M, K	2
O	Implementing the app in the daily operations	N	1

Source: Own processing

The results of the POP-QM software reveal that the project's optimistic duration is 35 weeks. However, activity D, which refers to Dividing the roles and exact tasks between staff members, may be postponed for two weeks (slack 2) without affecting the whole project completion time.

Similarly, Activity G, establishing the app development timeline, and Activity I, validating the functionality, might be postponed for up to 12 weeks. The latter implies that the app development may continue as team discussions continue. Lastly, Activity K may be delayed for four weeks without affecting the project timeline. The Activity is the pilot version and trial process implementation at the Brno subsidiary. Critical parameters such as earliest start, earliest finish, latest start, and latest finish of all activities and slacks are also stated.

Table 5 Time Possibilities for the project implementation in weeks (own processing)

Activity	Activity time	Early Start	Early Finish	Late Start	Late Finish	Slack
Project	35					
A	2	0	2	0	2	0
B	1	2	3	2	3	0
C	3	3	6	3	6	0
D	1	6	7	8	9	2
E	3	6	9	6	9	0
F	4	9	13	9	13	0
G	1	13	14	25	26	12
H	5	13	18	13	18	0
I	2	14	16	26	28	12
J	8	18	26	18	26	0
K	2	26	28	30	32	4
L	2	26	28	26	28	0
M	4	28	32	28	32	0
N	2	32	34	32	34	0
O	1	34	35	34	35	0

4.3 Interface design and primary features

The interface design process aimed to develop a flexible, easily accessible, and brand-aligned visual for the users. Due to the Infosys logo having two variations, the application's demo version was considered in two color schemes.

Figure 15 Infosys logo with white and dark background (Infosys Limited, 2023)

Below is presented each display version matching the corresponding logo.

Following careful consideration, the application design was modified to match the logo with a blue background. Since it appears more pleasing and clearer when combined with the text. It also better

reflects the company's current merchandise, website, and previous information systems. The design process and changes are presented in detailed manner in Appendix B.

Figure 16 Demo version of the Infoscion app (own processing)

According to earlier research on information system experience, the old InfosysIT system had an application-centric approach in which employees had to know the entire navigation path to achieve even simple assistance (Infosys Limited, 2021). The purpose of the Infoscion app was to alter the underlying framework from application-centric to action-centric so that employees could effortlessly access the necessary function. The program will have an accessible and uncomplicated interface, as seen in the above display version.

4.3.1 Main features of the application

To enhance the employee experience on numerous fronts, Infoscion will include functionalities for leave and trip requests, claim reimbursements, attendance applications and timesheets, and so on. It will also subsequently offer a chatbot for rapid inquiry resolution on guidelines and processes, as well

as goal formulation and performance measurement, among other things. Its numerous connections will provide a smooth workflow and data integrity.

Attendance system

One of the most challenging obstacles Infosys encountered throughout the pandemic was digitally validating employee attendance. Most campuses and branches have attendance devices installed at building entrances and exits. The individual entering must first swipe his or her ID card and then offer his or her fingerprint in the same machine for verification. It is the case for employees and trainees in the Infosys branch in Brno. Each level and department is separately identified and requires further card verification before entry.

The initially displayed functions for the remotely working employee to apply for and sign the attendance are shown below. It is also helpful in unforeseen events such as Card Machine Issues or Workplace Accidents.

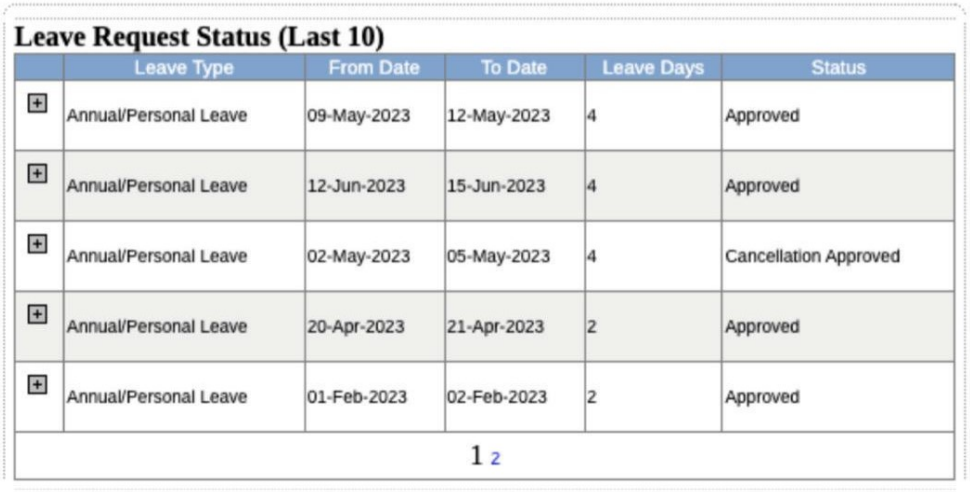
Figure 17 Remote Attendance application (own processing)

It will provide numerous options for the employee to describe the cause of the remote attendance application and select the worked hours for that day. It is also important to note if the work was completed on an Infosys laptop or a personal computer. To ensure the accuracy of the information given, the process must be approved by management or an authorized staff member.

Leave requests

As previously mentioned, employee requests for Paid Time Off (PTO) may be delayed due to the HR department being overworked over the holiday seasons or sliding through the cracks due to the HR staff receiving too many emails and managing too much paperwork. As a result, the leave system will

benefit all employees. Personnel will be able to request PTO remotely or cancel it if their plans alter. Furthermore, they will be able to check the remaining days in a Leave Balance feature without asking an HR representative or management.



Leave Request Status (Last 10)

	Leave Type	From Date	To Date	Leave Days	Status
⊞	Annual/Personal Leave	09-May-2023	12-May-2023	4	Approved
⊞	Annual/Personal Leave	12-Jun-2023	15-Jun-2023	4	Approved
⊞	Annual/Personal Leave	02-May-2023	05-May-2023	4	Cancellation Approved
⊞	Annual/Personal Leave	20-Apr-2023	21-Apr-2023	2	Approved
⊞	Annual/Personal Leave	01-Feb-2023	02-Feb-2023	2	Approved

1 2

Figure 18 Leave Request System

(own processing based on current Intranet system (Infosys Limited, 2022)

Goal evaluation and reporting analytics

The mobile app will incorporate some of the features and functions of the present intranet's browser-based tools. Team interactions will affect the employee experience. Managers will link sessions that boost employee engagement, push individuals to execute their duties well, and follow through on their commitment to the company. The function will also assist management and the HR department monitor and optimize their internal support operations. Having visibility into patterns and gaps would help HR professionals make more educated capacity-planning choices, eventually improving support operations.

Financial requests and tax claims

Another essential feature will be the ability to manage financial claims and requests. Employees will check their monthly pay stubs, request financial claims, and so on independently. Furthermore, they can seek tax benefits and reimbursements at the start of the fiscal year. An interesting fact is that Infosys recruits students or foreigners who may need to be made aware of the tax benefits they are entitled to. As a result, it will serve as a clearinghouse for similar tax return claims.

Ticketing and keyword system

A ticketing system will make it easier for HR staff to handle and react to employee inquiries. Help desk administrators can configure the system to route tickets to the appropriate teams. HR employees will then have a single view of all unresolved tickets to manage.

Furthermore, team members will be able to create tasks and alerts for each request, tag and reassign specific tasks to others, and categorize requests based on urgency or subject. This automation will assist in guaranteeing that critical operations can continue while service quality is maintained.

To recap, the author will respond to the vital question of what the organization hopes to accomplish through digitization and application development. The author divides the favorable outcome into three parts to offer a precise response.

Figure 19 The positive outcomes of the Infoscion app implementation (own processing)

It would start by simplifying the working process by removing unnecessary steps for approval. Second, the application will provide a contextually appropriate platform that will make HR services accessible to workers' at any time and from any location. Finally, it will free up HR employees to improve the employee experience and build strategic alliances with business divisions.

5 COST AND RISK ANALYSIS OF THE PROPOSED SOLUTION

5.1 Cost analysis of the proposed solution

As already well remarked, developing and using a self-service desk can provide numerous benefits to a company. However, there are costs involved with developing and operating a self-service desk that must be considered before adopting the application to make sure that it is financially viable for the company. The development and maintenance expenses are displayed in the chart below.

Table 6 Initial budget for the app development and usage (own processing)

No	Items	Descriptions	Amount (CZK)	Quantity	Totals (CZK)
1.	Software development	Salary costs of the responsible staff	150000	10	1500000
2.	Set of computers	High performers or servers	27000	4	108000
3.	Trademark registration	Trademark registration fee according to Czech law	5000	-	5000
4.	R&D experts	Outsourced assistance	20000	3	60000
5.	Partial Budget				1673000

The app development and implementation will be handled within the team rather than through outsourcing. The staff members assigned to work on this project's responsible staff members can not work on other client projects around that period or can only carry out their duties in restricted capacities. Besides, it is estimated that at least three months would be required to create the app; hence the required cost equates to three months' wage. In these circumstances, the saying "time is money" is directly represented in the cost analysis of the project. It is also important to mention that companies operating in the Czech Republic contribute to their employee's social security and health

insurance. As a result, the contribution amount is considered in the salary cost. In Infosys, the average salary for software engineers is around 50-60k CZK, and at least a team of 10 people would be required to work on the project.

Although the center is already equipped with powerful computers and servers, some personnel are now working using client equipment. As a result, at least four of them will require replacements. In the Czech Republic, the approximate cost of a computer with the required technicality is roughly 27000 CZK.

Registering the application's name for future use and copyright protection is also necessary. The standard minimum charge for registering "Infoscion" as a trademark will be 5000 CZK.

Before the application is released, R&D professionals must check it. In this instance, it is best to outsource specialists. The amount required is calculated per hour of work for five days. In the Czech Republic, the approximate hourly wage for an R&D Engineer is CZK 500.

Some indirect costs predicted for the Infoscion application during its first year of operation are shown below.

Table 7 Indirect costs anticipated during the 1st year (own processing)

No	Items	Descriptions	Amount (CZK)	Quantity	Totals (CZK)
1.	Maintenance Cost	Hardware maintenance, and technical support	58430		58430
2.	Training Cost	Seminars and workshops on how to use the self-service desk effectively	21000	30	630000
3.	Integration Cost	Integration with other company systems	42000		42000
4.	Support Cost	Staff members working on ongoing support	50000	6	300000

5.	Contingency Fund	Unforeseen	35000		35000
	Total				1065430

After the initial development, the self-service desk will require ongoing maintenance to guarantee that the app stays updated and functioning. Bug fixes, security upgrades, and feature additions can all incur maintenance expenditures. The minimum cost required for upkeep is around 2500 Euro equivalent, which is noted above in CZK currency.

Another expense connected with adopting a self-service desk application is training. Employees will need to be qualified on how to utilize the new system efficiently, which may necessitate additional investment in terms of time and resources. The cost is determined by the complexity of the system and the number of people that require training. The anticipated cost of educating HR team members (about 30 workers) was 21k CZK.

The Infoscion app will need to be connected with other existing systems inside the company. The integration cost is determined by the complexity of the integration and the number of systems that need to be integrated. The initially estimated cost for integration ranges around 1800 €, equal to 42000 CZK.

Although the self-service desk is intended to lessen the strain on support staff, some assistance will still be required. The cost of assistance is determined by the number of support tickets received and the complexity of the issues. The number of employees in the support team is expected to be at least six.

Total Budget for the Project = Initial Cost + Overhead

CZK 1673000 + 1065430 = CZK 2738430

5.1.1 Calculation of Return on Investment

ROI (Return on Investment) is a financial metric measurement that represents in percentage the profitability of an investment in relation to its cost.

There are two versions of calculating ROI:

Simple ROI: This is the most basic form of ROI calculation and is calculated as follows:

ROI = (Gain from Investment - Cost of Investment) / Cost of Investment

ROI with Time Value of Money: This version of ROI considers the time value of money by factoring in the opportunity cost of the investment. It is calculated as follows:

ROI = (Present Value of Future Cash Flows - Initial Investment) / Initial Investment

The second method was chosen to calculate the Project's ROI because it takes into account external factors such as inflation rate fluctuations.

To calculate the ROI for developing and implementing a self-service desk in the Infosys subsidiary in Brno, we need to consider the time value of money by factoring in the interest rate.

It was assumed that the discount rate equals 10%, which represents the cost of capital for Infosys company.

The total Budget for the project, as noted above, is equal to CZK 2738430

Costs:

- Development costs: CZK 1673000
- Overhead costs: CZK 1065430

Benefits:

Two considerable monetary benefits were chosen to be included. Firstly, new employees are also needed as the company is rapidly growing. It is estimated that with the new application and automation system, the company will not need to hire at least seven new employees. The monthly average salary for HR professionals is around CZK 50K in the Czech Republic.

The second benefit is that the automation system can be later sold to current and potential clients. The minimum price of similar automation systems in the market is around 10000 € equivalent, of which in CZK is 235000.

- Efficient workforce: CZK 4200000 per year
- Future revenue from selling the application: CZK 235000

The present value of the benefits can be calculated using the below formula:

PV = FV / (1 + r) ^ n

where PV is the present value,

FV is the future value,
r is the discount rate, and
n is the number of years.

PV of increased efficiency = CZK 4200000 / (1 + 10%) ^ 1 = CZK 3818182
PV of future revenue = CZK 235000 / (1 + 10%) ^ 2 = CZK 187629

Total present value of benefits = CZK 4005811

ROI calculation: ROI = (Total present value of benefits - Total cost) / Total cost

ROI = (CZK 4005811 - CZK 2738430) / CZK 2738430
ROI = 0.4628 or 46.28%

The ROI with the interest rate for developing and implementing a self-service desk in Infosys company in Brno is 46.28%. The percentage indicates that the investment is profitable and would result in a net gain for the company.

5.2 Risk analysis of the proposed solution

The project should also be evaluated in terms of the risk component. That is the degree of impact and probability of each risk. Risk assessment can be qualitative or quantitative. Qualitative risk analysis identifies and evaluates risks using broad terminology (e.g., moderate, severe, catastrophic), whereas quantitative risk analysis calculates numerical probabilities over the probable effects.

5.2.1 Potential risks and mitigations

Some of the possible risks and their potential consequences are as follows:

Technical Risks: The app may be incompatible with existing IT infrastructure or include technological flaws that cause delays or data loss. The latter can influence the HR department's performance and lead to employee unhappiness.

Security Concerns: The app might be subject to cyber-attacks, allowing unauthorized access to sensitive employee data such as personal and wage information. The result might be legal liabilities and harm to Infosys's reputation.

Maintenance Risks: The app will require regular maintenance and upgrades, which may incur additional fees and cause downtime. Failure to maintain and update the software might reduce its efficacy and generate employee discontent.

Adoption Risks: Employees may hesitate to utilize the app, leading to poor adoption rates and limited advantages. This also negatively impacts the department's performance and results in a waste of resources.

In order to resolve and mitigate the above-mentioned risks, the following steps are advised:

- The installation may fail, resulting in a waste of resources: Infosys can reduce this risk by rigorous planning and preparation before launching the new system. This might entail running a pilot project and performing frequent reviews to determine the new system's success. Besides, to lower the implementation expenses mentioned above, Infosys can investigate various software and hardware choices, such as open-source solutions and cloud-based services.
- Technical defects may inevitably occur during the initial period, causing delays: Infosys can limit this risk by thoroughly testing and piloting the new system before complete deployment. In addition, the center will have a trustworthy technical team to tackle any difficulties that may develop throughout the deployment process.
- Security flaws may emerge, particularly during the implementation phase; management may reduce this risk by completing extensive security evaluations and adopting robust security measures to prevent unwanted access and preserve sensitive employee data. Furthermore, Infosys may maintain a specific team to monitor and respond to security concerns.
- Employees may also be resistant to alterations. It may be remedied by giving proper training and communication to employees regarding the benefits and purpose of the new system, as well as ensuring they are comfortable using the app. This can include online training courses, in-person training sessions, and continuing technical assistance. Additionally, Infosys may include workers in the implementation process to improve buy-in and engagement.

Infosys Limited has adopted the integrated risk management framework that is being implemented across the Group companies. The framework is based on international standards and tailored to suit the business needs of Infosys Group, including Infosys BPM Limited.

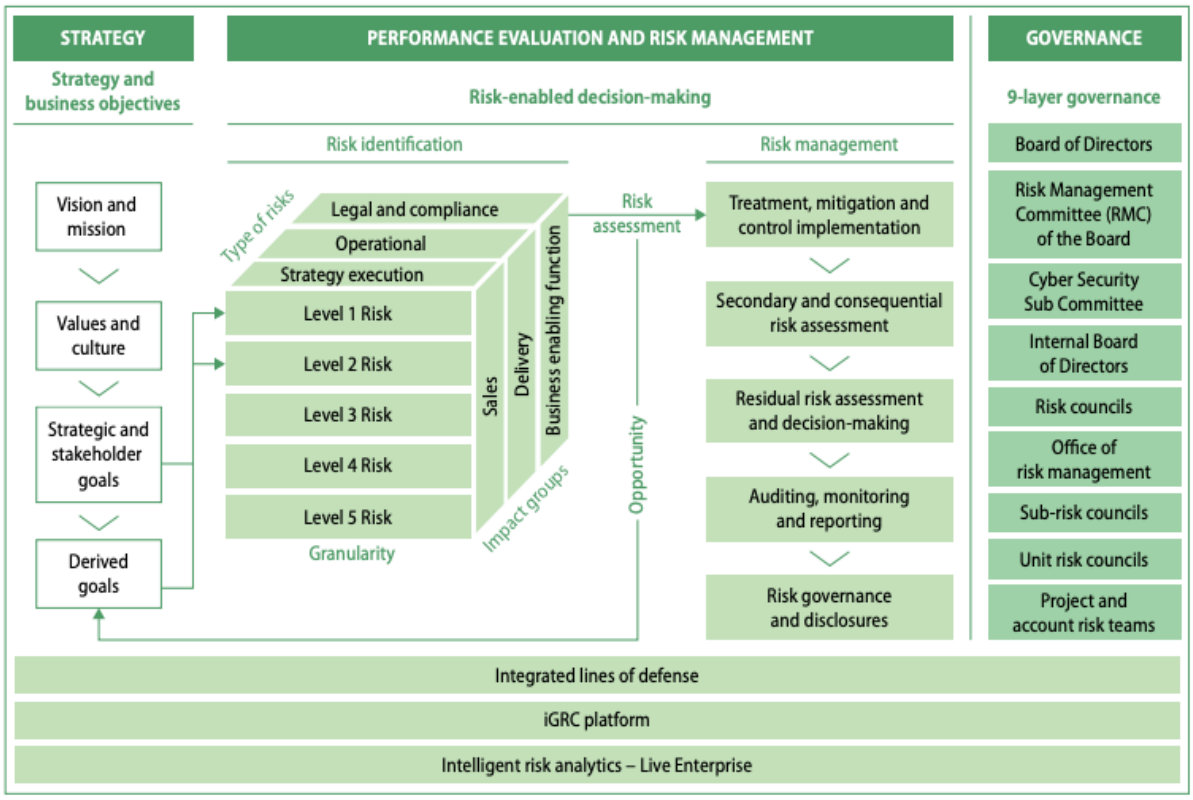


Figure 20 Integrated Risk Management Framework (Infosys BPM, 2022)

To summarize, while there are risks involved with incorporating a self-service desk app in Infosys' HR department, these may be addressed by careful preparation and execution of suitable procedures.

5.2.2 Analysis in RIPRAN Method

To better understand the risks connected with the Infoscion application, a breakdown of the RIPRAN methodology was carried out. The method contains the following steps.

- Risk analysis: Strategy of risk management and reparation of the risk analysis
- Identification of the risk: The next phase in RIPRAN is identifying possible project risks. It entails examining the project or system for potential threats, vulnerabilities, or weaknesses, such as operational, reputational, project, financial, technical, political, or structural risks.
- Quantification of the risk: Once the risks have been analyzed, they are prioritized based on their likelihood and possible impact. It enables the project team to focus on the risks that have a higher chance of occurring and will have the most substantial impact on the project or company.

Risk Value =occurrence probability x risk impact

- Response to risk: A strategy is created in this stage to address the identified risks. The strategy should contain risk mitigation, avoidance, transfer, or acceptance strategies.
- General risk assessment: Overall risk evaluation

The risk of a system setup in a corporation may be divided into two categories: management risks and technological threats. Management threats occur when company leadership fails to place the requirements to prepare the team for change or are uninterested in the new information system. Failing to prepare the team for the new working method is also a managerial issue. It might be caused by a lag in the project strategy at the start or a lack of resources for the appropriate training. Technology threads address any technical concerns arising during the development and after the program is released. It contains technical flaws, faults, security flaws, and vulnerabilities.

The table below presents the examination of the RIPRAN method, including risk analysis, response, and risk assessment. The chart also includes suggestions for reducing risk.

Table 8 Analysis in the RIPRAN method (own processing)

No.	Threat	Scenario	Occurrence probability 0 - 1.0	Impact 0 - 10	Risk Value	Solution
1	Management's lack of interest	Project development and implementation are unlikely to happen.	0,15	10	1,5	The risk can have substantial effects on the project, although the value is minimal.
2	Lack of necessary funds	Development and maintenance expenses may be prohibitively costly, resulting in insufficient financial resources.	0,20	5	1	Find an alternative outsourcing service or incorporate teams from other branches willing to work with a reduced budget.
3	Employee non-compliance	Resistance from employees to adapt to the new system.	0,5	8	4	The management can provide proper training and communication to staff on the benefits and purpose of the new system. Rules setting for using this system if needed.
4	Security Concerns	Security failures may surface, allowing unauthorized access to confidential employee data.	0,5	8,5	4,25	Completing thorough security inspections and implementing resilient security measures such as strict rules, passwords, and OTP system.
5	Implementation failure	The app may be incompatible with existing IT infrastructure	0,3	4	1,2	Running a pilot project and conducting regular check-ups
6	Technical defects	Technical issues may inevitably occur during the initial period, causing delays or data loss.	0,6	6,5	3,9	Before full implementation, the Infoscion system should be appropriately tested and piloted.

CONCLUSION

HRM has changed significantly in recent years. Due to the support for information technology improvement in this expertise sector, the emphasis has switched from administrative management obligations to becoming a strategic partner in the overall organization operations.

The widespread usage of information technologies has dramatically impacted how HR is working today. It encouraged a substantial transition of HR procedures and practices within enterprises, notably how they gather, store, use, and share information. Numerous HRM operations have grown more efficient, as highlighted in the thesis. The impact of this service level improvement has enabled HR to play a more prominent role in corporate planning. This increased position in corporate strategy alters the HR function and its professionals dramatically.

The paper includes a complete description of the BPM and its significant components. A study of the relationship between digitalization and BPM is also undertaken, focusing on analyzing the programs used to automate business processes and the downsides of implementation. The specific information systems utilized for HRM at Infosys are also discussed in order to provide a broad understanding of the present scenario and the need for transformation.

The main objective of this practical analysis was to identify and develop a means of improving communication and HR operations in the Infosys subsidiary in Brno.

Internal process analysis was performed to understand better how the HR department functions and where adjustments are needed. Existing information systems were compared, and comprehensive approaches were offered. Following that, time analysis and actions required to complete the project successfully were determined.

Along with the user interface design, the application's branding was decided. The specific design was chosen to be consistent with the company's branding to make the adoption process more manageable. Similarly, the name was also created to convey that technology is only meant to assist and not replace staff personnel.

The SWOT analysis gave a broad range of benefits and analyzed in detail the external and internal aspects of the project. The study sought to establish the project's aims and identify the internal and external factors that are favorable and unfavorable to achieving those goals.

A cost analysis was also performed to determine the investment's profitability. The chosen period was one year, and the calculated ROI was equal to 46.28 %, making the project profitable. Moreover,

the RIPRAN approach was used to do a risk analysis. To determine the key hazards and how they may be mitigated.

Overall, the Infoscion self-service system has the potential to enhance efficiency, accuracy, flexibility, and employee engagement. However, the system's development and deployment must be properly managed in order to minimize potential risks and threats while maximizing attainable opportunities.

BIBLIOGRAPHY

Books

ALUVALA, R. *Human Resource Management: New Horizons*. Zenon Academic Publishing, 2017, ISBN 9385886088.

BLEISTEIN, Steven. *Rapid Organizational Change*. Wiley, 2017, 176 p. ISBN 9781119219033.

BRIDGER, Emma. *Employee Engagement: A Practical Introduction*. 2nd ed. London: Kogan Page, 2018, 296p. ISBN 9780749483517.

DUMAS, M. *Encyclopedia of Database Systems* (L. Liu & M. T. Özsu, Eds.). Springer, 2018, ISBN 978-1-4614-8266-6.

DUMAS, M., ROSA, M. L., MENDLING, J., & REIJERS**,** H. A. *Fundamentals of Business Process Management*. 2nd ed. Springer, 2018, ISBN 9783662565094.

GILL, J., JOHNSON, P., & CLARK, M. Research *Methods for Managers*. 4th ed. SAGE Publications, 2010, ISBN 978-1847870940.

IANDOLO, F., MERCURI, F., QUATTROCIOCCHI, B., & CALABRESE, M. *Industry Dynamics and Industry 4.0: Drones for Remote Sensing Applications*. Taylor & Francis, 2022, 142 p. ISBN 9781003329046.

MARTÍNEZ-ROJAS, A., JIMENEZ, A., & GONZÁLEZ ENRÍQUEZ, J. *Business Process Management*. 2022, pp. 75–90. Chapter. Analyzing Variable Human Actions for Robotic Process Automation. ISBN 978-3-031-16102-5.

MENDLING, J., & BROCKE, J. v., eds. *Business Process Management Cases: Digital Innovation and Business Transformation in Practice*. Springer International Publishing, 2017, ISBN 978-3319863726.

POMFFYOVA, M. *Management of Information Systems* (M. Pomffyova, Ed.). IntechOpen, 2018, ISBN 978-1-83881-364-2.

ROSEMANN, M., BROCKE, J. v., & HAMMER, M. *Handbook on Business Process Management,* Springer, 2015*,* Chapter first: Introduction, Methods, and Information Systems. ISBN 978-364226455.

SRINIVASAN, V. *The Intelligent Enterprise in the Era of Big Data*. John Wiley & Sons, 2016, ISBN 978-1118834626.

TAVANA, M, ed. *Enterprise Information Systems and the Digitalization of Business Functions*. IGI Global, 2017, 486 p. ISBN 9781522523826.

Journals

ADESOLA, S., & BALNES, T. S. (2005, February). *Developing and evaluating a methodology for business process improvement*. Business Process Management Journal, *11*(1), 37-46.

AGGARWAL, N., & KAPOOR, M. (2012, March). *Human Resource Information Systems (HRIS) - Its role and importance in Business Competitiveness.* GIAN JYOTI E-JOURNAL, *1*(2).

AGUIRRE, S., & RODRIGUEZ, A. (2017, September 27). *Automation of a Business Process Using Robotic Process Automation (RPA): A Case Study.* Applied Computer Sciences in Engineering, 65-71.

AHMAD, T., & LOOY, A. V. (2020, August 22). *Business Process Management and Digital Innovations*. Sustainability, 12(17).

ALOTAIBI, Y. (2014, May 20). *Business process modelling challenges and solutions: a literature review*. Journal of Intelligent Manufacturing, *27*(1), 701-723. https://doi.org/10.1007/s10845-014-0917-4

ARAUJO, W. J. d., & GOMES, T. A. (2022, 11 06). *Evaluation of business process management systems (BPMS): analysis of Bizagi and Bonita softwares*. RDBCI Revista Digital de Biblioteconomia e Ciência da Informação, 20(1).

BALASUNDARAM, S., & VENKATAGIR, S. (2020). *A structured approach to implementing Robotic Process Automation in HR*. Journal of Physics: Conference Series, 1-12.

BUSSLER, L., & DAVIS, E. (2016, February 01). *Information Systems: The Quiet Revolution in Human Resource Management.* Journal of Computer Information Systems, *42*(2), 17-20.

DOEBELI, G., FISHER, R., GAPP, R. P., & SANZOGNI, L. (2011, April). *Using BPM governance to align systems and practice.* Business Process Management Journal, *17*(2), 184 - 202.

EULERICH, M., WADDOUPS, N., WAGENER, M., & WOOD, D. A. (2022, February 9). *The Dark Side of Robotic Process Automation.* SSRN, 1-23.

FISCHER a, M., IMGRUND, F., JANIESCH, C., & WINKELMANN, A. (2020, July). *Strategy archetypes for digital transformation: Defining meta objectives using business process management*. Information & Management, *57*(5).

GOERZIG, D., & BAUERNHANSL, T. (2018). *Enterprise architectures for the digital transformation in small and medium-sized enterprises*. ScienceDirect, 67(1), 540-545.

HUANG, F., & VASARHELYI, M. A. (2019, December). *Applying robotic process automation (RPA) in auditing: A framework Author links open overlay panel*. International Journal of Accounting Information Systems, 35(1).

KÖNIG, M., BEIN, L., NIKAJ, A., & WESKE, M. (2020, September 3). *Integrating Robotic Process Automation into Business Process Management*. BPM 2020: Business Process Management: Blockchain and Robotic Process Automation Forum, 132-146.

MADAKAM, S., HOLMUKHE, R. M., & JAISWAL, D. K. (2019, January 10). *The Future Digital Work Force: Robotic Process Automation* (RPA). JISTEM - Journal of Information Systems and Technology Management.

MALLON, J. (2015, April 22). *The Importance of Human-Centered Workplace Design*. Ergonomics.

MASUM**,** A.-K., BEH, L.-S., AZAD, A.-K., & HOQUE, K. (2018, January 1). *Intelligent Human Resource Information System (iHRIS): A Holistic Decision Support Framework for HR Excellence*. The International Arab Journal of Information Technology, 15(1), 121 - 130.

NAWAZ, N. (2019, March-April). *Robotic Process Automation for Recruitment Process.* International Journal of Advanced Research in Engineering and Technology *(IJARET)*, *10*(2), 608-611.

OBEIDAT, B. Y. (2012, September 3). *The Relationship between Human Resource Information System (HRIS) Functions and Human Resource Management (HRM) Functionalities.* Journal of Management and Research. Journal of Management and Research, 4, 192-211.

PAPAGEORGIOU, D. (2018). *Transforming the HR Function Through Robotic Process Automation*. Benefits Quarterly, 34(2), 27-30.

RIBEIRO, J., LIMA, R., ECKHARDT, T., & PAIVA, S. (2021). *Procedia* Computer Science, *181*, 51-58.

SCHMIEDEL, T., BROCKE, J. v., & RECKER, J. (2013, April). *Which cultural values matter to business process management? Results from a global Delphi study*. Business Process Management Journal, *19*(2), 292-317.

SCHWAB, W. (2021, June). Hybrid (Return to) Workplace – *How will it shape up in 2021 and beyond?* Infosys. https://www.infosys.com/engineering-services/insights/documents/hybrid-workplace.pdf

SHANKAR, K., ADHYA, S., & SEIFERT, N. (2020, November 03).| *Reinventing Human Resources for the 21st Century.* Infosys Knowledge Institute.

ŠIMEK, D., & ŠPERKA, R. (2019, September 19). *How Robot/human Orchestration Can Help in an HR Department: A Case Study From a Pilot Implementation.* Organizacija, *52*(3), 204 - 217. DOI: https://doi.org/10.2478/orga-2019-0013

SLABY, J. R. (2012, October). Robotic automation emerges as a threat to traditional low-cost outsourcing. HfS Research, 1-18.

SZELĄGOWSKI, M., & BERNIAK-WOŹNY, J. (2022). *How to improve the assessment of BPM maturity in the era of digital transformation*. Information Systems and e-Business Management, *20*(2).

VAN DER AALST, W. M. P., BICHLER, M., & HEINZL, A. (2018). *Robotic Process Automation.* Business & information systems engineering, 60(1), 269-272.

VAN LOOY, A. (2017, August 03). *A Quantitative Study of the Link Between Business Process Management and Digital Innovation*. Business Process Management Forum., *297*, 177-192.

YEH, C.-H., LEE, G.-G., & PAI, J.-C. (2012, April). *How information system capability affects e-business information technology strategy implementation: An empirical study in Taiwan*. Business Process Management Journal, *18*(2).

Online

INFOSYS BPM. (2022). *The Importance of Artificial Intelligence in Recruitment*. Infosys BPM. Retrieved April 8, 2023, from https://www.infosysbpm.com/blogs/human-resource-outsourcing/artificial-intelligence-role-in-hiring-process.html

INFOSYS BPM. (2022). *Infosys BPM Limited Annual Report 2021–22*. Infosys BPM. Retrieved April 10, 2023, from https://www.infosysbpm.com/about/documents/annual-report-2022.pdf

INFOSYS BPM. (2023). *Business Process Outsourcing Services - Czech republic*. Infosys BPM. Retrieved April 1, 2023, from https://www.infosysbpm.com/czech-republic.html

INFOSYS (Czech Republic) Limited s.r.o. (2022, March 31). *Infosys Subsidiary Financials Report 2021-22 Subsidiary Name | 1 Subsidiary Financials Report 2021-22*. Infosys. Retrieved April 14, 2023, from https://www.infosys.com/investors/reports-filings/documents/subsidiaries-financial-statements-2021-22.pdf

INFOSYS LIMITED. (2004). *Newsroom | Press Releases | Infosys Rated Amongst World's Best in Employee Training and Development*. Infosys. Retrieved April 4, 2023, from https://www.infosys.com/newsroom/press-releases/2004/employee-training-and-development.html

INFOSYS LIMITED. (2021). *Infosys BPM Careers | Apply*. Infosys BPM. Retrieved April 8, 2023, from https://www.infosysbpm.com/careers/apply.html

INFOSYS LIMITED. (2021). *Infosys Talent Pulse Report 2021*. Infosys. Retrieved April 13, 2023, from https://www.infosys.com/careers/documents/talent-pulse-report-2021.pdf

INFOSYS LIMITED. (2022, June 21). ESG Report 2021-22. *Infosys*. https://www.infosys.com/sustainability/documents/infosys-esg-report-print-version-2021-22.pdf

INFOSYS LIMITED. (2023). *Media Resources | Infosys Logo | Campus*. Infosys. Retrieved April 12, 2023, from https://www.infosys.com/newsroom/journalist-resources/infosyslogo.html

INFOSYS LIMITED. (2023). *Newsroom | Press Releases | Infosys Rated Amongst World's Best in Employee Training and Development*. Infosys. Retrieved April 8, 2023, from https://www.infosys.com/newsroom/press-releases/2004/employee-training-and-development.html

INFOSYS LIMITED. (2023). *Company History & Defining Milestones | About Us*. Infosys. Retrieved April 1, 2023, from https://www.infosys.com/about/history.html

STATISTA. (2022, August 17). *Infosys: number of employees 2022*. Statista. Retrieved April 8, 2023, from https://www.statista.com/statistics/328288/employees-at-infosys/

WORLD BANK. (2022). *GDP growth (annual %) - Czechia | Data*. World Bank Data. Retrieved April 16, 2023, from https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=CZ

LIST OF ABBREVIATIONS

AI Artificial Intelligence

BCG Boston Consulting Group

BPO Business Process Outsourcing

BPM Business Process Management

FV Future Value

HALE Health Assessment & Lifestyle Enrichment

HR Human Resources

HRIS Human Resources Information System

HRM Human Resource Management

IS Information System

OTP One-Time Password

PV Present Value

R&D Research and Development

ROI Return on Investment

RPA Robotic Process Automation

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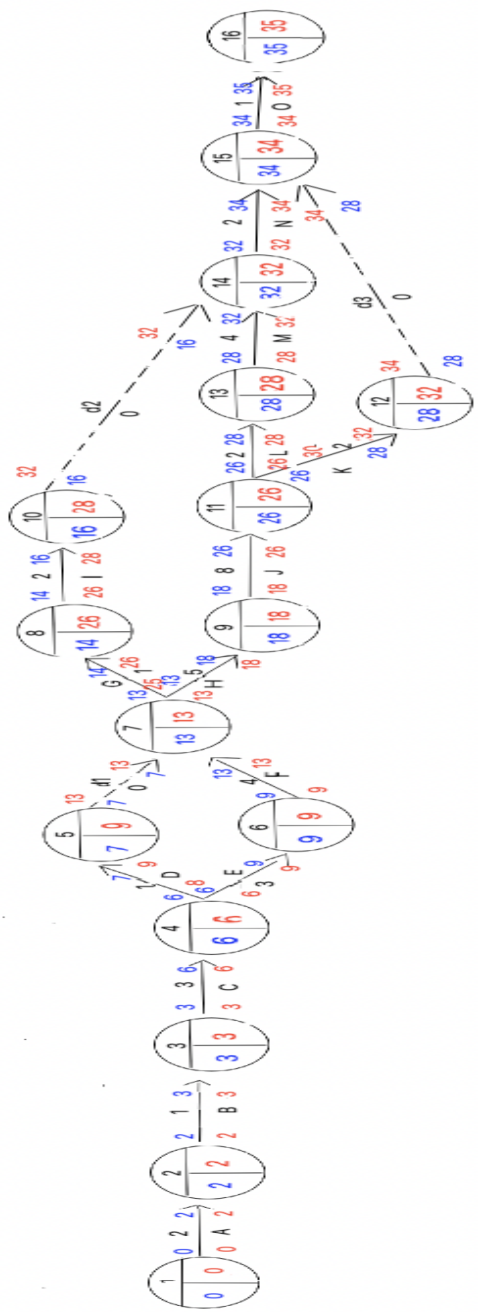
APPENDICES

Appendix A: Timeframe of the activities for the project realization



Appendix B: Interface design process, display color scheme versions