# The Project of Development of Human Resource Management System for a Chosen Company

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# ZADÁNÍ DIPLOMOVÉ PRÁCE
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## Zásady pro vypracování

Introduction
Define the objectives and the application methods used in the Master thesis.
I. Theoretical part

- Compile the theoretical information about human resource management systems and human resource trends, including multiple case studies.

II. Practical part

- Analyze the current situation of the human resources department of the chosen company.
- Prepare a project to develop a human resource management system.
- Elaborate the cost, time and risk analysis of the project.

Conclusion

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# ABSTRAKT

Technologie postupují vpřed dosud nepoznaným tempem. Inovace se odehrávají v mnoha oblastech od mobilních technologií, cloud technologií, robotiky, umělé inteligence, biometrických technologií, technologií dronů až po kvantové počítače. Všechny tyto inovace přinášejí digitalizaci do všech aspektů našich životů, což se odráží i v podnikatelském prostředí. Zatímco se odehrávají všechny tyto změny, je nemyslitelné, aby lidské zdroje stály mimo. Řízení lidských zdrojů by mělo sledovat trendy, držet krok se změnami a přizpůsobovat se novým technologiím.

Cílem této práce je zanalyzovat současný stav konkrétního oddělení řízení lidských zdrojů ve vybrané společnosti a zlepšit problematické aspekty jeho procesů tvorbou systému pro řízení lidských zdrojů, který zužitkuje aktuální trendy v řízení lidských zdrojů, a to na základě rešerše literatury.

Jistě stojí za zmínku, že manažer řízení lidských zdrojů nemůže být expertem v oblasti software a nelze od něj očekávat široké technické a datové znalosti. Nicméně by měl být schopen posoudit možnosti technologie tak, aby zvládl svou práci, uspokojil potřeby své společnosti, ušetřil náklady, navýšil produktivitu zaměstnanců a jasně byl schopen přetlumočit své potřeby technickému personálu. Právě proto není účelem této studie se do hloubky zaobírat technickými aspekty vývoje daného systému, nýbrž pouze ospravedlnit navrhované řešení a rozvést projektový záměr, kterým se bude společnosti řídit v průběhu implementace.

Klíčová slova: systém pro řízení lidských zdrojů, vývoj systémů, projektový záměr, trendy v řízení lidských zdrojů, data-driven human resources

# ABSTRACT

Technology is advancing at a pace never seen before. Innovations are taking place in many areas of technology such as mobile technologies, cloud computing, robotics, artificial intelligence, biometric technologies, drones, and quantum computers. All these innovations bring digitalization to every aspect of our lives, and business gets its share from this digitalization. While all these changes are happening, it is out of question for human resources to remain outside of this change. Therefore, it should follow the trends, keep pace with changes and adapt to new technologies.

The aim of the study was to analyze the current situation of the HR team of the chosen company and improve problematic aspects of its processes by developing a human resource management system which leverages human resource trends based on the literature review.

It is worth mentioning that a human resources manager cannot be a software expert and cannot be expected to have broad technical and data knowledge. However, they should show good power of judgment on the possibilities of technology and how to use it to facilitate their own work, meet the needs of the company, save costs, increase the efficiency of employees, and clearly convey these needs to technical personnel. For this reason, the purpose of the study is not to dive into technical aspects of system development but to justify the proposed solution and to elaborate a business case which will guide the company during implementation.

Keywords: human resources management system, system development, business case, human resources trends, data-driven human resources

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I hereby declare that the print version of my Bachelor's/Master's thesis and the electronic version of my thesis deposited in the IS/STAG system are identical.

Zlín, Czech Republic, June 4th, 2021                                          Berna Karataş

# CONTENTS

# INTRODUCTION

Employees are paramount assets of any company since they are the ones who do all the real work and keep the business operating. It is the responsibility of the human resources department to deal with the entire employee life cycle: recruitment, onboarding, payroll, learning and development, succession planning, wellbeing of the employees, offboarding, employer branding and any other activity related to personnel affairs. Human resource management systems assist the human resource managers in day-to-day transactional activities which do not add value to the company, thus the managers can focus on strategic and transformational aspects of human resources which bring actual value to a company.

Sometimes, when individuals or teams focus on one subject for a long time, tunnel vision occurs. In such cases, the help of a third party is required to see the reality as a whole and to find alternative solutions. XYZ's human resources team, which is always busy with too much transactional i.e. manual work, is not able to spare time to focus on strategic human resource management and/or allocate the necessary time for project development. Realizing that they need a human resource management system, the team was about to make one of the common mistakes in human resource management system practices: purchasing an off-shelf solution without performing a needs analysis. However, any solution is likely to fail when practice does not align with the needs of the team or company.

The expectation of the company from this master's thesis is to get the HR processes analyzed by an outsider, to get information about the trends in the HR sector, and to learn about possible solutions regarding implementing a human resource management system.

The theoretical part of the study covers what the human resource management system is, its benefits, its evolution in order to better understand its functions, and the systems development life cycle. Subsequently, the emerging trends in the human resources are discussed and exemplified in four case studies.

In the practical part, for the readers to better understand the analysis, basic information about the company is given and the current situation of human resources processes is presented first. Afterwards, based on the literature review and system development phases outlined in the theoretical part, a human resource management system project is developed, and research questions are answered.

# OBJECTIVES AND METHODS OF MASTER THESIS PROCESSING

This study is addressed to a Czech IT company in the cloud sector. Due to the non-disclosure agreement signed between the author and the company on 07.12.2020, the company was mentioned under the alias "XYZ company" throughout the entire study.

In this study, the research investigation is conducted using both empirical and theoretical methods, especially relying on the case study method. Literature review is carried out using secondary sources such as books, journals, magazines, industry reports, online sources i.e. blogs, videos, websites.

Human resources in any organization is rich in data, having such as: personal employee data, recruitment data, key performance indicators, career progression data, absenteeism figures, satisfaction feedback. Therefore, in the second part of the study, qualitative data analysis is used for analyzing the current situation of the Human Resources department of the chosen company and creating the project to improve processes. Only the data that the company was willing to share was used.

The thesis is dedicated to analyzing the problems in the processes of the HR department of the chosen company and improving the problematic processes.

**Objectives of the Study**

The general purpose of the study is to justify the human resource management system proposed as a solution to the problems faced. The study is in the nature of a business case of human resource management system development. It will guide the company in the case of implementation of a human resource management system as it covers all the issues that the company should consider.

**Research Questions**

1. Is the current human resource management system of the company sufficient? Would adding features and extensions help to solve the problems?

2. What are the trends that the company should follow in order to meet its needs?

3. What should be considered during the human resource management system development?

# I.  THEORY

# 1 DEFINITION OF HUMAN RESOURCE MANAGEMENT SYSTEM

A Human Resource Management System (HRMS), or a Human Resource Information System (HRIS) is a system that combines human resources management with technology, and assists managers and employees at every stage of the employee life cycle by collection, storage, management, and distribution of data pertaining to all functions of human resources. It is supported by different technologies such as cloud computing, mobile technologies, artificial intelligence, and machine learning.

Back in 1982, Walker (cited in Kovach and Cathcart, 1999, s.275) defined an HRIS as 'a systematic procedure for collecting, storing, maintaining, retrieving, and validating data needed by an organization about its human resources, personnel activities, and organization unit characteristics'.

Kavanagh and Johnson. (eds., 2018, s.8) more broadly defines an HRIS as:

> An HRIS is a system used to acquire, store, manipulate, analyze, retrieve, and distribute information regarding an organization's human resources to support HRM and managerial decisions. An HRIS is not simply computer hardware and associated HR related software, it also includes people, forms, policies and procedures, and data.

HRIS is an integrated software that gathers different human resource functions in modules (Sharon and Swapnalekha, 2015, s. 538). An HRIS can contain multiple modules or can be developed on a single module. HRIS software generally consists of, but are not limited to, the following modules in figure 1.
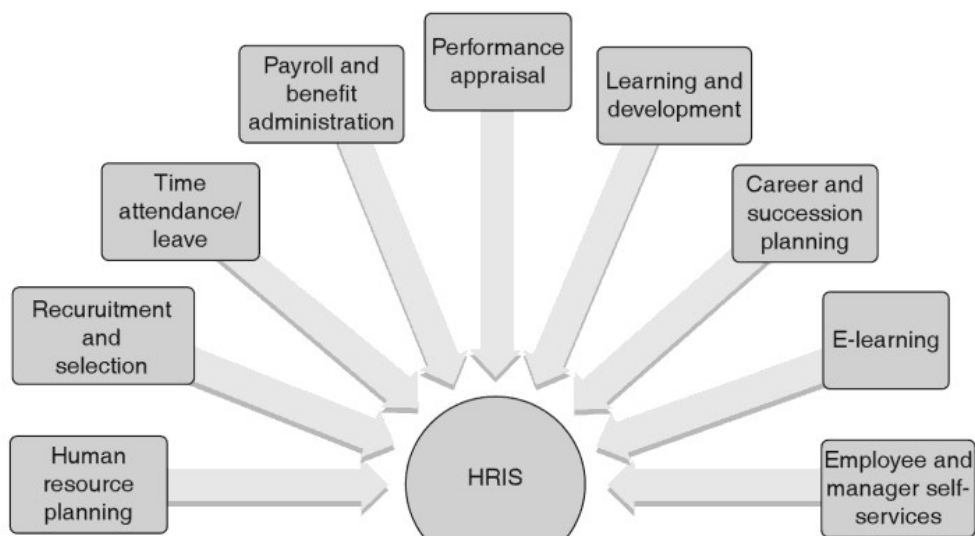


Figure 1 HRIS modules (Sharon and Swapnalekha, 2015)

## 2 BENEFITS OF HRMS

An HRMS can fulfill almost all HR processes, thus it relieves human resources managers from repetitive tasks and helps them to focus on strategic and critical aspects of human resource management. It expedites transactional processes, helps to standardize, and improve human resource operations. With implementation of HRMS, costs can be reduced, and budget can be better controlled. For these reasons, it increases the competitiveness of the organization. (Aggarwal and Kapoor, 2012)

Not only HR managers benefit from HRMS, but also team leaders and other managers do. An HRMS 'helps the organizations to keep an accurate, complete and updated database in real time' (Aggarwal and Kapoor, 2012), and to eliminate 'likelihood of errors caused by human factors.' (Chakraborty and Mansor, 2013, s. 475) Thus it supports managers in effective decision-making.

It enables self-service to employees by allowing them to manage their own data such as holidays, sick days, learning and development activities, and monitoring information related to pay, benefits and retirement. It provides 24/7 data availability and transparency. Overall, it increases employee satisfaction. (Kavanagh and Johnson eds., 2018; Aggarwal and Kapoor, 2012)

Beneficiaries of HRMS are not limited to employees and managers. Potential employees (candidates), analysts, business partners benefit from it as well. (Kavanagh and Johnson eds., 2018, s. 48) However, the information provided to people outside the organization is usually limited. For instance, candidates might apply for a job position through this system, however they will most likely not be able to view any other features than a number of features in the applicant tracking system module.

# 3   EVOLUTION OF HRMS

At the present time, organizations are conscious that their employees are paramount and most strategic assets for the business and its competitiveness. Throughout history, companies have not always been aware of this and have not given importance to human resources management as it is today. Johnson, Lukaszewski and Stone (2016) argues that understanding history of a field is critical since 'it directs attention to the continuities and discontinuities associated with the evolutionary process.'

Human resource was known as "personnel staff" from the early 20th century until the 80s. Prior to World War II, as governments were not involved in employee relations, there was abuse of child labor and women, working in unsafe and unfair conditions. However, some employers set up departments to take care of administrative work related to working conditions and payroll. Back then, personnel staff was responsible for clerical record keeping of employee information on paper. (Kavanagh and Johnson eds., 2018, s. 12)

After World War II, with workers establishing trade unions and starting to seek their rights, governments also got involved in employee relations by legislating labor laws. Besides, companies started to realize the importance of employee motivation and productivity. Consequently, the role of personnel staff has begun to expand, and indeed specialist divisions were established. (Kavanagh and Johnson eds., 2018, s. 14)

Meanwhile, computer technology began to emerge, and transaction processing systems started to be developed. Not many organizations were able to develop these systems in house due to complexity and expenses, therefore companies that outsource these systems started to be established. Nevertheless, production, accounting, and supply chain functions were to benefit from these information systems quickly, while personnel department was one of the last functions to benefit from them (DeSanctis, cited in Johnson, Lukaszewski and Stone, 2016). This resulted in personnel staff to continue to do tasks manually. (Kavanagh and Johnson eds., 2018, s. 14)

By the 1960s, labor laws started to govern more aspects of employee relationship including occupational health and safety, discrimination at the workplace, employee protection, benefits, taxes. Thereby responsibilities of personnel departments increased. In order to secure legislative compliance, every single data regarding employment functions were recorded. Accordingly, personnel staff departments had a serious growth, and by the 80s, it turned into "human resources (HR) department". Finally, benefits of technology and

information systems were also recognized in human resources, and even though adoption of computer technology in human resources was very slow, there was an increasing demand for information systems in HR. The earliest generation of human resource management systems were used to support and automate payroll and record keeping functions (Johnson, Lukaszewski and Stone, 2016).

In the period from the 80s to the 90s, while companies generally focused on cost reduction, human resources began to focus on employee development and engagement rather than being solely responsible for administrative tasks. At the same time, the cost of computer technology was getting more reasonable day by day. Use of networking computers and personal computers together (client-server computing) allowed organizations to distribute employee information across the organization. Henceforth human resources have shifted from record keeping to activities that will bring more value to the company. (Kavanagh and Johnson eds., 2018, s. 15)

Throughout the 90s, there have been significant changes in management approaches and organizational structures. Companies got into fierce competition. Human resources gained more importance and transformed into a strategic function which is using proper planning and metrics. In this period, software vendors such as SAP (Systems, Applications, and Products), Oracle and PeopleSoft developed enterprise planning systems which integrate different functions of an organization, while other vendors chose to focus on one specific function, and even distinctive activities of that one function. For instance, all three of Kronos, ADP (Automatic Data Processing, Inc.), and Taleo were offering HRMS, but Kronos was focused on time and attendance, ADP was focused on payroll, and Taleo was focused on online recruiting. (Kavanagh and Johnson eds., 2018, s. 17)

Since then, there have been unprecedented rapid advances in technology, which influenced HR function as well as other functions. However, with the rise of cloud and mobile technologies, social media, big data, artificial intelligence, and many other supporting technologies, information systems evolved drastically. (Kavanagh and Johnson eds., 2018, s. 18) Last generation of human resource information systems do not just keep records and generate reports, but automate any kinds of repetitive administrative tasks, allow HR departments to focus on more strategic and critical aspects, help them to make more effective decisions, find the patterns and make predictions on metrics, and enable employees to self-serve.

## 4 DIFFERENCE BETWEEN HRMS, HRIS AND HCM

Human resource software is marketed under different terms such as Human Resource Management System (HRMS), Human Resource Information System (HRIS) and Human Capital System (HCM). However, there is neither an academic study nor universal definitions that separate these terms. Even though all these terms essentially represent the same thing, software vendors who want to stand out in the competition argue that these cover different functions of human resources, and publish various articles on the differences of HRMS, HRIS, and HCM on their websites.

When tracked online, the first of these articles seems to be published by Brien Westfall in 2016. Westfall (2016), who gives software advice, defends that even though it is not true 100% of the time, an HRIS typically performs common human resource tasks such as: personnel tracking, payroll, benefits administration, time and attendance, recruiting, with analytics and reporting. He states that, an HRMS, tends to offer more on top of HRIS and includes performance reviews and succession planning. He defines an HCM as the most comprehensive human resource software, covering a wide range of human resource tasks, and handling the entire employee life cycle. Mike Maiorino (2019), who has been in the HR technology industry for more than 20 years, distinguished the major functional differences based on his experience as following:

| HRIS | HCM | HRMS |
|---|---|---|
| Recruiting / ATS | HRIS | HCM |
| Core HR | Onboarding | Payroll |
| Benefit Admin / OE | Performance | Time & Labor |
| Absence Management | Position Control | |
| Compensation | Succession | |
| Training | Salary Planning | |
| Workflow | Global | |
| Self-Service | Analytics | |
| Reporting | | |

Figure 2 Differences between HRIS, HCM and HRMS (Maiorino, 2019)

According to Maiorino (2019), an HRIS covers nine major functions: recruiting and applicant tracking system (ATS), core human resources, benefit administration and open enrollment, absence management, compensation management, training and development, workflow, self-service for candidates, employees, managers, and reporting. Unlike Westfall, he argues that HCM covers less than HRMS. However, they both are on the same page that

these definitions might change from vendor to vendor, as well as due to the evolution of software over time as the industry develops rapidly. Articles published by software vendors are based on Westfall and Maiorino's articles, with or without a reference. Seemingly, they have made changes on original articles to adapt their own software to this categorization.

After all, these terms are obviously used for marketing purposes, and HR software customers should not be fooled by these terms but should evaluate the features and functions of each software according to their needs.

## 5 DESIGNING AND IMPLEMENTING AN HRMS

There are different opinions in the literature on information system development and implementation. Remus (2006) discusses five steps in the system development process: analysis, design, implementation, introduction, evaluation. Valacich and Schneider (2018) divide the process into four primary phases: systems planning and selection, systems analysis, systems design, systems implementation and operation. Rampton, Turnbull, and Doran (cited in Kavanagh and Johnson eds., 2018) provide 13 steps in the implementation process. The Society for Human Resource Management (SHRM) discusses eight steps: developing a business case for an HRMS, transformation of HR service delivery, determining the organization's HRMS needs, planning process, design considerations, vendor selection, implementation of an HRMS, evaluation of the new system (SHRM, 2021). Likewise, different vendors codify their implementations in different steps. For instance, SwoopTalent, an HR data systems provider, mentions eight steps in its step-by-step guideline to HRMS implementation: planning and defining objectives, involving stakeholders, creating a project team, evaluating options, creating a process map for implementation, execution of implementation, post-live training, testing post-live performance (SwoopTalent, 2018).

As each organization has a unique culture and needs, it is understandable that the systems development life cycle varies accordingly. Looking at all these approaches, it can be seen that most scholars or practitioners advocate essentially similar processes, but some of them divide details into separate steps. Therefore, major system development activities can be outlined in five main phases: planning, analysis, design, implementation, and maintenance. (Kavanagh and Johnson eds., 2018)

### 5.1 Planning

Planning is a critical phase which includes both long-range strategic planning and short-range operational planning. The aim of this phase is to provide a general idea of the issues that need to be addressed and a framework within which the implementation team can proceed. 'As this phase is at a strategic level, the planning is very high level and not detailed.' (Kavanagh and Johnson eds., 2018; SHRM, 2021) In the planning process, following topics should be covered:

- Project manager or project leader

- Steering committee or project charter

- Implementation team

- Management support

- Software implementation

- Data migration and configuration

- Change management

- "Go live"

- Project evaluation

- Potential pitfalls (Kavanagh and Johnson eds., 2018)

## 5.2  Analysis

Analysis phase is the most critical step in the system development life cycle as it helps to discover the disparity between the present HR systems and desired HR systems. In this step, capabilities, requirements and needs of the organization are specified in detail which will provide a clear picture for system design or vendor evaluation. This step is often skipped as it is the most time-consuming step. However, 'regardless of whether it is built or bought, HRMS software is expensive' (Kavanagh and Johnson eds., 2018), and the costs to fix errors will be more expensive in the later stages and will lead to a waste of time. Therefore, proper analysis is essential for a successful and effective implementation and should not be skipped. In the analysis process, the current situation and capabilities of the organization should be analyzed. Requirements, objectives, needs, priorities, performance gaps, tools, and techniques to be used, and scope of the project should be determined. When it is done, findings and recommendations should be reviewed with management. (Kavanagh and Johnson eds., 2018)

## 5.3  Design

Once the analysis phase is completed, the design phase starts. The design phase is the phase where the actual system and specifications are developed and finalized. Design phase consists of two steps: logical and physical design. Each step has a different purpose and perspective. (Kavanagh and Johnson eds., 2018)

The logical design focuses on the process aspects of a system. In this step, requirements and expectations from the system are translated into business processes using the findings and recommendations obtained in the analysis phase. There are several methodologies to carry out the logical design. One of these methodologies is a well-established procedure that uses process mapping, which represents current or desired processes usually on a data flow diagram. This graphical representation provides a deeper understanding of systems and subsystems. As, it ensures a deeper analysis of the desired system, and it is usually used for business process reengineering. Therefore, if needed, existing systems can be changed or updated to fulfill needs in this step. To complete the data flow diagram, all processes must be included in the diagram. Also, it is necessary to mention that the outcome of this step is used to evaluate solutions and vendors. On the other hand, to implement the system successfully, a well-planned and careful logical design should be developed. Otherwise, it is not possible to develop an effective physical design. (Kavanagh and Johnson eds., 2018)

The physical design focuses on the technological aspect of a system (i.e. how the system will operate) which includes hardware, software, and technical manuals. In this step, business processes are translated into a physical system that best fits the business's needs with the help of logical design. Solution and vendor choices are made in this step. The pitfall often encountered in this step is ignoring the actual needs of the organization and going for the most popular practices. It is typically seen that companies purchase software based on its elegance or what they see in a trade show, rather than their organization's needs. However, these purchases usually fail. Therefore, physical design should be conducted properly and each activity in this step must be performed. The first major activity in this step is to decide how to proceed with system design. In this respect, a company has three choices. First option is not to proceed with system design as in some cases there might be 'important organizational or environmental reasons for not proceeding.' Second option is to reengineer the HR processes without purchasing new or upgrading the current HRMS. Third option is to purchase a new system or upgrade the existing one. Second major activity is to determine hardware and software needs, and where to obtain them. There are three ways that this can be done: building the system internally, buying prepackaged off-shelf solutions, or outsourcing the development. The following major activity is to create an implementation schedule. (Kavanagh and Johnson eds., 2018)

## 5.4 Implementation

When the design phase is completed, the implementation phase starts to be executed. In this phase, the actual system is developed, modules are configured, data is migrated, tests and third-party integrations are carried out, end users are trained, and the system goes live. There are two options to put the new system into use. As the first option, the change can be implemented immediately by cutting the old systems off and putting the new ones into use. The potential disadvantage of this option might be the adaptation process of employees to the new system, regardless of how successful the change management is managed. Second option can be gradual implementation, where both the old and new systems are used together for a while, and the old system is slowly cut down. The advantage of this option is that if there are any issues in the new system, they can be fixed without any delay in business operations. On the other hand, the disadvantage of this option is that every task should be done on both systems, which will undoubtedly be tiring and time-consuming. (Kavanagh and Johnson eds., 2018; SwoopTalent, 2018)

## 5.5 Maintenance

Once the system goes live, the maintenance phase starts. First activity of this phase is to evaluate HRMS. It should be evaluated whether HRMS meets the needs determined during the analysis phase, whether users accepted the system, and lessons learned. With this evaluation, the project is closed. From this on, the primary objective of maintenance is to prolong the system's useful life. This phase serves four different purposes. First is corrective maintenance, where the system troubles are fixed. Second is adaptive maintenance, where the system is adapted to emerging requirements. Third is perfective maintenance, where improvements are developed to increase the system's efficiency. Last is preventative maintenance, which includes hardware and software maintenance to prevent future system crashes. (Kavanagh and Johnson eds., 2018)

# 6 HUMAN RESOURCES TRENDS

## 6.1 Low-Code and No-Code Platforms

Conventional, code-intensive software development requires lines of code written manually in complex programming languages for creating the desired function and features in a program or application (Pratt, 2021; McKendrick, 2021). To develop traditional software, developers should have in-depth knowledge of computer languages, testing protocols, scalability, and deployment processes. (Pratt, 2021) As traditional software development relies on heavy hand-coding, it takes a long period of time to develop and launch a software, it is expensive, and it is hard to maintain. In the fast-paced and highly competitive world, as the needs are changing rapidly, the costly and time-consuming software development is not sufficient to meet the needs. Consequently, low-code and no-code platforms have emerged.

Low-code and no-code platforms are designed to facilitate software development and delivery by eliminating or minimizing hand-coding (Marvin, 2014). These platforms allow users to create cheaper and quicker software and applications in order to solve business problems faster and in a more agile way. They can be used to develop software and applications for various business, operational and technical purposes (Pratt, 2021).

No-code platforms do not require any programming knowledge. These platforms employ visual programming interfaces where users can select and connect components to create the desired software or application. Users can drag and drop items as if drafting flowcharts. (Pratt, 2021; McKendrick, 2021) No-code platforms target non-IT people, who do not have any coding skills, called "citizen developers" (Pratt, 2021). Thus, managers, office administrators, business analysts and others who know the business and needs, but do not have programming knowledge can create a software or an application (Pratt, 2021) instead of 'building a team internally of designers and developers, or outsourcing it to an agency.' (McKendrick, 2021) On the other hand, low-code platforms do not eliminate hand-coding completely. They target people who have programming knowledge to some degree for the reason that they 'employ visual development environments and automated linkages to back-end systems, databases, web services, or application program interfaces (API)' (McKendrick, 2021). Low-code platforms free up software developers only from writing complex hand-coding and configuration of data models and enable them to deliver projects easily and quickly.

These platforms provide numerous benefits to users. Besides providing agility and time and cost savings, it allows users to make continuous improvements to respond to changing business and customer needs, which makes them more reliable and stable. As it is easy to scale on cloud computing, it facilitates data migration during development, and it is accessible from anywhere. (Mendix Technology, 2021) One of the biggest advantages is that they allow the creation of applications that can run on all devices with a single code base (Marvin, 2014), unlike traditional software development. Because with traditional software development, it is necessary to develop software separately for each device, i.e. mobile, tablet and desktop, and even operating system.

However, there are potential risks and pitfalls to watch out for. It is asserted that anyone can develop software with these platforms. Regardless of the method used in software development, no application can guarantee flawless operation. Therefore, it is important to have a proper understanding of underlying operating systems, scalability requirements, or basic concepts. As people without technical knowledge cannot remedy flaws, it is more favorable for IT departments or software developers to create the applications needed. (Reselman, 2018) On the other hand, software that can be created quickly can have security or compliance problems, creating a security vulnerability especially if it is open to external users (Rubens, 2014). Therefore, vendor policies should be read carefully before purchasing these platforms, and data governance should be well understood. Additionally, IT departments should remain active to provide security practices. If potential risks and pitfalls are managed, low-code and no-code platforms can 'dramatically accelerate an organization's digital transformation and quickly deliver value' (McKendrick, 2021).

Gartner (cited in Mendix Technology, 2021) 'predicts that low-code application development will be responsible for more than 65% of application development activity by 2024'. Therefore, it is beneficial to keep an eye on these platforms.

## 6.2   Artificial Intelligence

Artificial Intelligence (AI) is an area of computer science that allows machines to perform intelligence behaviors by learning, thinking, and reacting like humans (Graham, 2021; Oracle, 2019). AI is a broader concept that includes several components as machine learning, deep learning, natural language processing, and neural networks (Eubanks, 2018).

As humans, we gain skills through experience, and trial and error. We learn walking, talking, and speaking our language at a young age. In time, we can easily recognize people we know

among a crowd. We learn and acquire all these skills 'via a network of neurons in our brain' (Marr and Ward, 2019), which guides our behaviors and impacts the way we learn and more. However, since it is unknown how these neurons work, it is not possible to turn this process into an algorithm, and program the rules for computers yet. Instead, these neurons are replicated artificially in computers, and allowed to create their own rules, just like human brains do. This is referred to as machine learning. In machine learning, computers are fed with data and left completely or partially on their own to independently create algorithms. Which means, these computers learn 'without being explicitly programmed' (Eubanks, 2018). And 'machine learning using multiple layers of artificial neuron networks' (Marr and Ward, 2019) is referred to as deep learning. Deep learning is a subfield of machine learning. "Deep" in deep learning comes from the number of layers needed to train a computer. It can be thought of as the subconsciousness of humans. If a fish photo is shown to a human, the person knows even without thinking that it is a fish since it is filtered in the subconsciousness. This filtering occurs deep in our brains as "The animal in the photo is in the water and has scales. What is it? Fish." On the other hand, to execute all these and enable machines to interact with humans, it is necessary for computers to understand how humans interact with each other. And this is where natural language processing comes into play. The machines trained with considerable input and taught what humans sound like are able to understand human language as it is spoken. Combined with machine learning, it is even possible for these systems to interpret the specific words, tone, emotions, and context. (Eubanks, 2018; Marr and Ward, 2019)

Realizing the benefits and potential of artificial intelligence, companies have been investing in artificial intelligence and embrace this technology for a while. 50% of respondents of the McKinsey Global Survey (2020) on artificial intelligence stated that they have adopted AI in at least one business function in their companies. Although human resources are not at the top of the functions adopted artificial intelligence, it gets some share. In fact, HR is already rich in data since all data are recorded. Therefore, artificial intelligence can offer tremendous value for every function of HR.

In his book Data-Driven HR, Bernard Marr (2018) argues there are four main categories that businesses make good use of data:

- To make better decisions,
- To improve operations,

- To better understand customers,

- Monetizing data.

It is an undeniable fact that there is an unconscious bias against new graduates, women, and minorities when hiring. Furthermore, traditional hiring tools are also biased since certain characteristics are looked at in job-related skills, but filtering tools do not provide efficient assessment. The ability of artificial intelligence to eliminate these biases is a great example of how it can help HR to make better decisions. (Polli,2019) Artificial intelligence will not have these biases unless it is fed with data such as age, gender, and seniority, and trained incorrectly. Moreover, it is able to source and screen more candidates than a traditional hiring tool as machine learning algorithms learn to use synonyms and go beyond simple keywords, and evaluate these candidates using the same standard (Oracle, 2019).

Artificial intelligence can improve operations by identifying areas for improvement and making them more efficient. For instance, it can identify where HR professionals spend their time, money, and effort the most, or it can deliver tailored learning and development paths to employees and increase employee satisfaction. (Marr, 2018)

Employees of an organization are its internal customers, and AI can provide unprecedented insights into their behaviors, satisfaction, and preferences. Best example of better understanding customers through artificial intelligence can be sentiment analysis. Companies regularly hold satisfaction interviews with employees but end up with large amounts of unstructured data. Aim of sentiment analysis is to understand whether the attitude of an individual or a group is positive, negative, or neutral towards a topic. It helps to uncover the truth behind words, and to understand thoughts or feelings. (Marr, 2018)

Beyond assisting HR managers by automating the tasks and providing insights, AI offers countless possibilities for HR functions. It can ensure employee safety with deployed sensors, predict turnover rates or employee performances, help employees to become more self-sufficient, uncover hidden problems and/or most capable successors, and many more. Most importantly, it can do processes more accurately than a human. (Oracle, 2019; Marr, 2018)

Monetizing data related to people of an organization might cause ethical issues, therefore the legal framework should be drawn carefully and in detail.

## 6.3 Gamification

Although information systems take more place in our lives every day, they lack in engaging and motivating the users, and most of them are used out of necessity, especially in a working or educational context. The answer to the question of how to make information systems more motivating, effective, and fun lies in the rising trend: gamification.

Deterding et al. (cited in Stieglitz et al., 2017) describes gamification in the simplest explanation as an innovative approach using game mechanics in a non-gaming context to give it a game-like feel. Despite there is no broadly accepted definition, Burke (2014) gathers common characteristics that most definitions share as:

- '***Game mechanics***: key elements that are common to many games, such as points, badges, and leaderboards.'

- '***Experience design***: the journey players take with elements such as game play, play space, and story line.'

- '***Digital engagement***: players interact with computers, smart phones, wearable monitors, or other digital devices rather than personal engagement.'

- 'The goal of gamification is to ***motivate people*** to change behaviors or develop skills, or to drive innovation.'

- 'Gamification focuses on enabling players to ***achieve their goals*** – and consequently the organization achieves its goals.'

Gamification is used in different areas such as sales, marketing, human resources, education, healthcare, customer loyalty, productivity improvement, and sustainability (Semercioğlu, 2016). Studies show that adoption of information system software with game elements increases in business environments and has a positive impact on the effectiveness and efficiency of employees (Stieglitz et al., 2017).

In practice, human resources use gamification in hiring, onboarding, learning and development, performance management, team building, and employee wellbeing to improve the employee experience. Nevertheless, it is mostly encountered in learning and development. According to recent research by Cognizant and Future Workplace (2021), 14% of the respondents currently use gamification for learning and development, and 22% plan to use it within the next two years. Employees can be motivated to complete training programs, which are not usually a priority for them, by adding a gamification experience

(Sims, 2019). It provides a concrete indicator for employees to see their progress. A gamification designed in a way that employees can see not only their own development but also the development of their colleagues can develop a positive competition.

In talent acquisition, it can be used to measure the competencies of candidates during recruitment. In addition, rewards and incentives can be used to encourage employees to recommend candidates (Sims, 2019). Including gamification in referral programs can significantly benefit human resources departments and organizations by taking it to another level.

According to Davies-Greenwald (2019), gamification is not necessarily deployed with technology. One of the simplest and most common gamification examples without technology is scavenger hunt, used for onboarding. Newcomers, who are given small tips, tasks, and questions, follow these traces and get to know the company culture, departments, office and other employees (Lopushinsky, 2021). This small yet effective gamification facilitates newcomers' participation and socialization in the workplace.

Many more examples can be given about the use of gamification in human resources. It is a fact that gamification is an emerging trend which has a great potential. On the other hand, it is very susceptible to failure as it is full of pitfalls. Firstly, people who see successful applications mistake that gamification is a magic elixir to motivate employees and make them do everything (Burke, 2014) Secondly, they are mistaken that gamification is about turning everything into a game. Likewise, they think gamification is simply adding points and badges into a serious context. However, there are many requirements, mechanics, dynamics, components, design methods, and theories underlying gamification. Moreover, it is directly linked to sociology, psychology, strategy, design, and technology (Semercioğlu, 2016). Only if all these are understood, used, and designed correctly, organizations can leverage gamification and achieve the outcomes.

# 7 CASE STUDIES

This chapter consists of three cases to demonstrate how trends and HRMS are adopted by companies in different industries and different sizes. In some cases, for problems faced by companies to be better understood, the history of the companies has been included.

## 7.1 Nissan: HRMS Implementation

### 7.1.1 Background

In 1910, Yoshisuke Aikawa established Tobata Casting Co., which was controlling foundries and manufacturing auto parts. In 1928, he established the holding company Nippon Sangyo, which included Tobata Casting. In 1931, Aikawa received DAT Jidosha Seizo to be affiliated with Tobata Casting, which was the beginning of automobile manufacturing for the company. Since 'Aikawa's ambition was not restricted to being an automobile manufacturer', he separated the automobile parts division a year later and the corporate name changed to Nissan Motor Co. Ltd. Aikawa 'diversified into real estate and insurance as well', which led to a lack of a strong cohesive culture throughout the company. This, combined with the lack of HR policy, led to a disconnection between employees and management. Between 1933 and 1951 Nissan's culture weakened even more. After World War II, even though it kept growing, it was an unstable organization, and it went through at least seven presidential changes, and hierarchy kept increasing. (Nissan, 2021; Team Nissan, 2021; Gupta and Banerjee, 2013)

In the 1980s, Japanese economy was booming, Nissan doubled its sales. However, competition was high, and Nissan did not have the culture to survive. With the impact of the recession, Nissan got stuck in a huge debt trap and suffered heavy financial losses. Nissan found the solution in the Renault alliance in 1998. This alliance had great benefits for both companies. CEO and Chairman of Renault Louis Schweitzer, appointed Carlos Ghosn as COO of Nissan. 'Carlos Ghosn rose to the level of President and CEO by 2001, and Nissan turned into a success story under his management.' (Gupta and Banerjee, 2013)

### 7.1.2 Challenge

Carlos Ghosn, CEO of Nissan, successfully analyzed the challenges faced. The company was suffering from lack of vision, mission, cultural efficiency, and teamwork. There was no proper performance and promotion practices. Administrative tasks were not carried out in

an efficient manner, and HR practices were not standardized. He was also concerned about overall employee satisfaction. (Gupta and Banerjee, 2013)

Nissan was depicting Japanese culture in its practices. For instance, the role of the master (senior positions) were held by senior people, who were paid the highest. The promotion was not performance-based, it was based on egalitarianism and fairness. On the contrary, the company was not successful in representing teamwork which is also part of Japanese culture. (Gupta and Banerjee, 2013)

Nissan already had an intranet to carry out administrative tasks, though the system was not user-friendly and most of the employees did not have access to it. Ghosn knew it is possible to have a dynamic system in which employees can have access to the HR-related information they want 24/7 and serve themself. This kind of system would take away the repetitive administrative and transactional tasks from the HR department, and let them focus on more strategic issues. (Gupta and Banerjee, 2013)

### 7.1.3 Solution

Ghosn introduced several plans and strategies to transform the company over the years, and one of them was to reshape the human resource function as a whole. 'By February 2010, Nissan had standardized all of its HR practices.' More open communication was embraced unlike the old heavy bureaucracy. New employees also started to be paid high, with a performance-oriented pay system and a 'commitment and stretched-target' system. New financial incentives, rewards, and promotion were brought. Talent management was introduced, which did not exist before Ghosn. However, the biggest change was the implementation of an effective HRMS system. (Gupta and Banerjee, 2013)

Nissan collaborated with two partners to ensure smooth delivery and the best results. One of the partners was Enwisen who provided the case management, communication support, and decision support 'along with developing a direct employee access portal.' Second partner was PeopleSoft, a third-party business solutions provider, who designed and implemented the HRMS system. Nissan was able to integrate different PeopleSoft solutions thanks to the service provided by Enwisen. (Gupta and Banerjee, 2013)

One of the project objectives was to provide employees real-time access to the system 24/7. A system available 24/7 meant that it 'should have a single sign-in facility and keep all generic and standard services out of the facility.' This solution required three tiers. The first tier was represented by HR staff, where the employee queries were handled. Eight people

were responsible in this tier and two of them were available at night even though there were no queries generated. This impression assured employees that service was available even at unconventional hours, just like promised. On the other hand, the second tier covered the benefits administration, where all activities were monitored through analytics and real-time dashboards. The third tier catered to the CEOs. (Gupta and Banerjee, 2013)

Security of information on the system was highly prioritized as it contained sensitive employee information. Nissan successfully managed to implement the project, and the results were impressive. (Gupta and Banerjee, 2013)

### 7.1.4 Challenges Faced During the Project

The major challenge faced during the project implementation was change management. Not only was a new system being introduced, but the whole HR function was transforming, and this was a change that will affect everyone in the company. People were used to getting things done for them by the HR department, and the change meant everyone had to look up information themselves and meet their own needs. How the organization's people would react and accept the change was a mental block that had to be managed before the project was implemented. Nissan solved this problem with open communication, explaining clearly what was being done, when and how, and what benefits it will bring to all employees. Finally, the change was gradually accepted by the employees. (Gupta and Banerjee, 2013)

### 7.1.5 Results

During the development of HRMS at Nissan, Ghosn set very clear goals such as 'reduced response time in employee's query, and faster communication regarding policies to employees.' (Gupta and Banerjee, 2013)

With the implementation of HRMS, employees were able to view and make changes on their own information, such as pay slips, leaves, and holiday details, instead of filling forms and waiting for the HR department to do it for them. Therefore, the risk of delays or losing papers was eliminated as paperwork was lessened. Nissan has employees all over the world, and the new HRMS has helped to standardize the HR practices for all Nissan employees. In time, choosing different languages and multiple currencies were also implemented. The system ensured transparency and open communication. The satisfaction amongst employees increased as well as efficiency. (Gupta and Banerjee, 2013)

Since transactions became faster, HR managers at Nissan were freed up from non-value adding tasks, thus could focus on more important initiatives. The system helped managers through report access and feedback to make decisions. Information held on the system used in planning other changes. (Gupta and Banerjee, 2013)

Finally, the HRMS assisted HR function during the period of recession. 'The HR department was able to restructure themselves without affecting too many people. Layoffs were the least and people were open to the idea of voluntary leave with appropriate incentives.' (Gupta and Banerjee, 2013)

## 7.2 Unilever: Artificial Intelligence in Recruitment and Onboarding

### 7.2.1 Background

In the early 18th century, the Jurgens family, who were in the butter trade, acquired the patent for making margarine from its inventor Mège Mouriès, and took a sample of this new product to Van den Berghs, a family of butter merchants, as they were in the same business. (Unilever, 2021n; Unilever, 2021o; Unilever, 2021q) They realized that margarine, which is possible to use not only animal fat but also a wide range of raw materials in its production, can be a butter alternative that can be mass produced. (Unilever, 2021a) On the other hand, Lever & Co, a family grocery business in northern England, started to produce soap with copra or pine kernel oil, which lather much more easily than traditional soaps made of animal fats in 1884. (Unilever, 2021s) While all these three businesses were expanding, margarine and soap manufacturing businesses increasingly began to move towards each other's market at the beginning of the 20th century. Competition and the sudden increase in raw material costs led many companies to set up associations to protect their interests and defend themselves against the supplier monopolies. (Unilever, 2021b)

During World War I, there was an increasing demand for margarine and soap as vital wartime supplies (Unilever, 2021c). However, in the next decade, there was a declining demand for the margarine as the butter reached more reasonable prices, and it made the trading conditions even more difficult. Jurgens and Van den Bergh joined forces to create the Margarine Union. A large group of European businesses, which are involved in the production of goods created from oils and fats, joined the union. 'On 2 September 1929, Lever Brothers and Margarine Unie signed an agreement to create Unilever. The businesses initially aimed to negotiate an arrangement to keep out of each other's principal interests of

soap and margarine production, but ultimately decided on an amalgamation instead.' Thus, the official history of Unilever began. (Unilever, 2021d)

In the period that followed, the company went through a difficult decade as affected by the Great Depression. 'In the late 30s in Germany, Unilever was unable to move profits out of the country and had to invest instead in enterprises unconnected with oils and fats including public utilities' (Unilever, 2021e), and hence Unilever acquired new businesses with a diverse range of products. During World War II, Unilever became the majority shareholder in preserved foods such as frozen and canned goods. (Unilever, 2021f) Leaving the effects of the war behind after 1950, meat, tea, adhesives, and deodorant businesses were acquired. (Unilever, 2021g) By the 1980s, Unilever was the world's 26th largest business. Unilever kept expanding its product and brand range by acquiring many different businesses around the world. (Unilever, 2021h) Between 2000-2009, Unilever transformed organizationally and strategically to deal with challenges the business faced, and to remain a sustainable business. This transformation included reshaping the brand portfolio. Some brands were disposed of, while some new brands were acquired. (Unilever 2021j) Today, it continues as a multinational company with 149,000 employees which operates in 190 countries. Currently, the company has more than 400 brands in three divisions: beauty, personal care, foods and refreshment, home care. (Unilever 2021r)

### 7.2.2 Challenge

As one of the world's biggest consumer goods companies, Unilever offers a three-year leader development program, Unilever Future Leaders, that prepares new graduates for business life regardless of function, department, or even country. (Anlatsın.com, 2019, sec: 00:21) The program is available in more than 50 countries and across all functions, which corresponds to 800 open positions. As can be predicted, Unilever receives hundreds of thousands of applications for the program – approximately 250,000 applicants from all around the world. The company had between four to six months to reduce this pool and hire the final 800 trainees. The challenge was to narrow the pool of 250,000+ people in such a limited time in a better and more efficient way than an in-person interview. The aim was to efficiently match applicants to posts globally. (Marr and Ward, 2019)

### 7.2.3 Solution

In 2015, Unilever developed a multistage process for hiring for Future Leaders positions. The first step is an online application, where candidates submit their curriculum vitae (CV)

or LinkedIn profile. The second step is a 20 minutes long gamified competency assessment, where candidates play 12 different neuroscience-based games online. Unilever partnered with AI recruitment specialists from Pymetrics to execute this. The games are not designed to win or lose, but they are designed to test candidates' aptitude and characteristics relevant to the roles they applied for. For instance, one of the games assesses the candidate's aptitude for risk, and it is designed as pumping air to virtual balloons. 'Candidates are awarded points for pumping more air into those balloons but must try to stop before the balloon bursts.' These games provide a systematic evaluation of the candidates' strengths and weaknesses and build a detailed aptitude profile of a person. The third step is an online video interview, where candidates record videos through their smartphones or computers while answering four questions and submit them. Unilever partnered with HireVue, a company that offers artificial intelligence solutions for hiring. HireVue's AI algorithms surface candidates based on language, word choice, body language, and facial expressions to determine if the candidate has the profile of someone who will be successful in the role. This technology 'captures data points that can be autonomously labeled to give readings indicative of characteristics such as "sense of purpose", "systematic thinking", or "resilience".' The candidates who successfully pass all these steps move on to the final stage, the assessment center. A final shortlist of 3,500 applicants are invited to assessment centers where they meet Unilever recruiters for the first time. Within the scope of the one-day assessment center, candidates participate in some case studies that they may encounter in business life. At the end of this stage, the final selection of 800 candidates to hire is made. Candidates receive detailed feedback at the end of each step, even if they are not ultimately hired. It is clearly explained how they did at each step, which characteristics of them fit and do not fit the position, why they got rejected, what they should improve if they want to be successful in a future application. Unilever's Chief HR Officer Leena Nair advocates that artificial intelligence allows Unilever to be more human this way since it is largely common that people who apply for positions at large companies usually do not hear anything but a thank you email saying "We will get back to you". (Unilever, 2021k; Marr and Ward, 2019; Unilever and HireVue, 2017)

Unilever uses artificial intelligence not only in recruitment but also in the onboarding process. New hires can ask their questions to an AI powered chatbot with a natural language chat interface, which is designed to speed up the onboarding process. (Marr and Ward, 2019)

### 7.2.4 Results

'Unilever has deployed this reimagined hiring process in over 53 countries in multiple languages, and over 80% of candidate feedback is positive' (Unilever and HireVue, 2017). Unilever's Chief HR Officer Leena Nair (cited in Marr and Ward, 2019) reported that the employee screening 'process had saved around 70,000-man hours of interviewing time.' 'The rate of offers to candidates who made it to the final round increased to 80% from 63%, and the acceptance rate of these offers increased to 82% from 64%' (Feloni, 2017). In one year, 'Unilever team saved over £1 million, reduced recruiting time by 75%.' System helped to hire the most ethnic and gender diverse class. (Unilever and HireVue, 2017)

On the other hand, chatbot is currently used in 36 countries amongst 190 countries the company operates. Users asked to rate how satisfied they are with the answers chatbot provides rate the system at 3.9 out of a maximum score of five. (Marr and Ward, 2019)

## 7.3 Marriott Hotels: Gamification and Social Media in Recruitment

### 7.3.1 Background

The story of the Marriott Hotel begins in 1927 in Washington D.C. Founder J. Willard Marriott and his wife, Alice, started a root beer stand business to quench people's thirst during hot summers. With the principle of good food and good service at a fair price, they added hot meals to their menu in a short time. The couple continued the restaurant business by opening different branches until 1957. In 1957, they got into the hotel business with a historic shift. By the 1980s, the company began to gather different hotel brands under its roof. The acquisition, which started with Residence Inn and pioneers, continued with brands such as The Ritz-Carlton Hotel Company and Renaissance Hotel Group. On the other hand, it launched different hotels that appeal to different segments. With the acquisition of Starwood Hotels & Resorts in 2016, Marriott created the world's largest hotel company. (Marriott International, 2021b) Currently, Marriott is the leader of its sector worldwide. It has 7,500+ hotel properties and 30 hotel brands operating in 132 countries. (Marriott International, 2021a)

### 7.3.2 Challenge

In 2011, Marriott launched a new hotel brand. Combined with open positions at other brands it holds, the company had to fill 50,000 positions worldwide by the end of 2011. In addition, the company was struggling to acquire talent, particularly in China and India. (Siedsma,

2011) Hospitality is not an attainable career in these countries due to economic reasons (Guadagno, 2011). Besides, in China, for example, people do not see hospitality as a prestigious job. They want their children to be engineers, doctors, lawyers. Therefore, Marriott started to look for a way to ensure that they know hospitality is a career with growth options and it is a real business to manage. (Siedsma, 2011)

### 7.3.3 Solution

Companies often prefer LinkedIn as a social media recruitment channel, as it is a professional social network. However, Marriott unusually chose Facebook as its medium. Susan Strayer LaMotte, former senior director, global employer brand and marketing of Marriott International, explained the reason in a statement that Marriott revealed its associates spend most of their time on Facebook outside of work and socialize on this platform (Siedsma, 2011). In addition, as Marriott is in the hospitality business, the employee profile it needs consists of people who are extroverted and love interaction. Facebook, on the other hand, has the audience that Marriott needs. That is why Marriott, which collaborated with Evviva Brands to solve the problem, came up with an interactive game solution played on Facebook. After 10 months of development, Marriott launched its Facebook career page and game "My Marriott Hotel". (Coene, 2019; Marr, 2018; Siedsma, 2011)

In this game, players first manage a virtual hotel restaurant kitchen. With the budget given to them, they perform tasks such as purchasing kitchen utensils and ingredients, hiring and training employees, and serving customers. Afterwards, they switch to different operations and continue the game with tasks such as delivering room service and managing the hotel. For each successful mission and satisfied customers, they collect points and are rewarded with profit. Unhappy customers cause loss of points. In this way, players can virtually experience what it is like to work at Marriott. In addition, when they click the "do it for real" button in the game, they are redirected to the career page to see the open positions. (Recruiterbox, 2021; Coene, 2019; Siedsma, 2011)

On the other hand, according to Marr (2018), the strategy for the Facebook career page is to show that Marriott is a desirable place to work. The posts on the page do not only consist of job postings, but also include photos and videos from behind the scenes. Thus, users get an idea of what it is like to work at Marriott. In addition, the page actively responds to comments

and messages, building engagement with users. It encourages users to apply for open positions.

### 7.3.4   Results

The game was officially launched on June 6, 2011. Within the first 48 hours, it was played in 58 countries 'including Germany, Hungary, Malaysia and South Africa' (Siedsma, 2011). It attracted more than 25,000 players within a week. Meanwhile, thanks to the game, the career page received over 100,000 views. In three weeks, the game was being played in 99 countries. (ICMR, 2015)

This game was never meant to be a part of the recruiting process. People wishing to apply for a job had to fill out a standard application. (Recruiterbox, 2021) However, it helped to make the company more competitive and showed job seekers what it is like to work at Marriott through a virtual experience. (Ordioni, 2015) Later on, the company used web analytics to measure the game's contribution to employer branding and how many people applied for a job from the game. (Siedsma, 2011)

My Marriott Hotel is not available anymore. However, as of May 2021, the Marriott Careers page is the largest Facebook recruitment page with 1.3 million likes and around 60,000 interactions weekly. (Marriott Careers, n.d.)

# II.   ANALYSIS

# 8 ABOUT THE COMPANY AND ITS HISTORY

The XYZ company was founded in 1996 under a different name from its current name. In the first 13 years, it was one of the hundreds of Microsoft partners, focusing on email exchange services. In 2009, the founder changed the strategy and started the Google business. However, the mission was still the same: drive business growth by simplifying the way companies work with technology.

The company, which became Premier Partner of Google within a short period of four years, also became a certified partner of Amazon in 2017. Since then, the company has been growing rapidly with two strong partners. The company's customers include well-known Czech companies such as Česká Spořitelna, Kiwi.com, Dáme Jídlo, Kofola, as well as the fast-growing Croatian retailer Studenac, the Vietnam division of consumer finance provider Home Credit, and Raiffeisenbank, a universal bank in Romania. The company has 1500+ customers worldwide with local presence in Prague, London, Bucharest, Belgrad, and Tallinn. The vision of the company is to become the most sought-after partner for technology and cloud solutions, and an expert to whom customers like to return to.

## 8.1 Sphere of Activity

To clearly understand the business done by the company, it is necessary to know what the concepts of on-premise (private cloud) and cloud computing (public cloud) are.

Typically, on-premise infrastructure is available to a single company. To access the data, the users must physically be in that company and use the account created specifically for themself. Private clouds are usually located in the company's data center, operation and maintenance of the system is provided by IT staff, and the company has full control and security of data. However, on-premise software is expensive for companies due to the high cost of necessary hardware, installation, maintenance, repair, and the necessity to ensure continuity. Its advantages can be listed as providing tighter security, stronger data governance, and lower latency for high-performance workloads. On the other hand, public cloud is offered as a service by third parties, it does not require the company to physically own a data center and therefore there are no maintenance and repair costs. Companies pay the service provider for the service they receive under various payment plans. Users can access data from anywhere with an internet connection, regardless of time and place. Other advantages include nearly unlimited scalability and access to next generation technologies like Artificial Intelligence and Machine Learning. (Dell, 2021) According to the Magic

Quadrant report published by Gartner in 2020, Amazon Web Services, Microsoft Azure, and Google Cloud are the leaders of cloud infrastructure and platform services. Alibaba Cloud, Oracle, IBM Cloud, and Tencent Cloud appear as niche players. (Dignan, 2021)

With the development of cloud services since the early 2000s, and rising trends such as remote working, businesses started to switch from on-premises software to cloud-based software. The main operation of XYZ company is to spearhead the digital transformation of its customers' migration to the cloud. The company provides professional advice to companies wishing to migrate from on-premises to public cloud in accordance with their needs, prepares the necessary infrastructure, and makes the cloud solutions tailored. In this way, companies do not waste time with the migration, worry about security and possible mistakes, and can focus on their own business.

It is necessary to clarify that the XYZ company is not a cloud service provider. The core business of the company is to resell already existing cloud solutions from Google and Amazon. The company does not develop anything internally, therefore does not have any own product. However, in accordance with the feedback from employees, the management decided to change this. They started their own MSP (Managed Services Provider) journey to have their own product. In spring 2020, the company had audits on all teams, processes, automation with Google to become an MSP partner. To become an MSP partner basically means two things: firstly, having extensive certifications from Google which brings exclusive benefits to the company such as marketing support and participation at Google Cloud events, direct Google Cloud customer engineering support, and designated listing in the Google Cloud Partner Directory. (Google, 2021c) According to April 2021 data, Google has only 26 MSP partners in the world that are specialized in cloud migration (Google, 2021b). Secondly, it means the company can have its own product or service on top of the reselling services, which would make it unique amongst its competitors.

## 8.2 Organizational Structure

With a combination of employees and contractors, the company has seventy-three people which are divided into eight teams as of April 2021. All teams report directly to the CEO. However, the company is planning to restructure teams in the future.

The heart of the company is the **Production Services**, which has four sub-teams: Delivery, Operations, WorkSpace, and Security. These teams consist of cloud engineers and cloud architects who deal with all data work including taking care of infrastructure,

implementation, improving services, alerting, monitoring of the services as well as providing support for problems of customers, and change management.

The **Product & Innovation** team is responsible for driving the overall product portfolio. The team brings and evaluates new business opportunities, defines products that are valuable, viable, and feasible.

The **Vendor Management** team consists of only one person for the present, the Vendor Manager, who is responsible for maintaining the relationships with vendors, following updates on products, and conveying these to other teams.

The **Customer Success** team is present at every customer touchpoint. They develop, maintain, and expand relationships with the customers. The ultimate responsibility of the team is the experience, satisfaction, and happiness of the customers. The team is constantly in touch with the customers to gather feedback about provided services and find new opportunities for the company.

**Marketing** team determines marketing strategies, experiments with growth strategies and ideas, identifies potential customers, sets communication channels with customers and the community, organizes cloud events, and improves the brand design. The team is also responsible for taking care of digital outputs of the company such as podcasts, webinars, and webpage of the company.

**Sales** team identifies target customer profiles, acquires new customers, makes deals, guides customers on their cloud journey, and helps them grow their business.

**Finance** Team, as in every company, deals with cash flow, payments, and costs.

The **Human Resources** team is responsible for ultimate employee experience and employer branding. Team's tasks include recruitment, onboarding, employee engagement, organizational learning and development, position changes, termination, and development of internal rules and policies. Team consists of five people. The HR Director is at the helm of entire HR processes and standards, HR strategy and design, culture cultivation, and internal communication. HR Managers, of which there are two, are in charge of hiring, employee experience, learning, and development besides sharing HR processes and standards, HR strategy and design, and culture cultivation with the HR Director. The Back-Office Manager is responsible for preparing the contracts, onboarding and offboarding processes, communication with lawyers, and administrative agenda. Admin Assistant takes care of office caring, benefits administration, employee changes, events, and team buildings.

There is neither micro-management nor strict rules within the company. There is no subordinate relationship between employees. Employees take initiative since there is no superior to give them orders. However, when somebody needs help, all colleagues are willing to help, and questions are always answered. There is a free flow of information.

## 8.3 Remote-First Approach

For the past few decades, technology and the internet have rapidly developed. Borders have disappeared with globalization. Workforce demographics have changed as new generations join the workforce. The concepts of "home office" and "remote-friendly" have been in our lives for a long time due to these changes. Home-office represents working only from home without any physical presence in the office, and often appears as the way freelancers work. Remote-friendly concept represents working in the office but enabling employees with the flexibility to work remotely when needed. (VMware, 2021)

Between March and June 2020, when the Covid-19 epidemic spread rapidly all over the world, many countries went under a mandatory lockdown, and companies had to work fully remote, albeit for a while. During this period, many companies, including Facebook, Twitter, Upwork, and Slack, have stated that they will offer their employees the opportunity to work fully remotely after the epidemic. (Courtney, 2021) Likewise, XYZ adopted the remote-first approach in March 2020, the second month of the epidemic restrictions. Remote-first is the approach of offering the opportunity to work remotely as the primary option for most or all employees. This approach provides a flexibility where employees do not only have to work from home, but can perform their work anywhere, regardless of location. (VMware, 2021)

The HR team continues to work on making remote-first approach a part of the company culture and rearranging the benefits accordingly.

## 8.4 Culture

The company has four values which its employees believe in and live by.

**Teamwork**: This value can be seen in every aspect of the company in everyday life. People in the company are strong individuals cooperating very well as a team. They are curious and eager to learn as well as they are willing to share. They cooperate, rely on each other, and enjoy working together.

**Flexibility**: The flexibility value manifests as a reaction and response to the current situation. The best example of how well this value is embraced among employees can be the transformation of the company into the remote-first approach in March 2020 without any problems.

**Innovation**: With innovation as a value, the company always encourages its employees to find more innovative, faster, and easier ways to do work. Every idea and opinion are respected and listened to. They innovate with purpose and their innovations make the business better.

**Service that exceeds expectation**: This value is the value that is most closely related to the way the company does its business. It helps employees to perceive the business and customers in the best way possible. The company aims to serve its customers in a way that always exceeds their expectations, and does this by understanding them, their story, experiences, and needs.

Cultural fit is highly valued during the hiring process; thus, it would not be wrong to say that the employees reflect the corporate culture.

## 8.5 Strategy

After long discussions between the top management and CxOs, in September 2020, the company determined its strategy for the next five years. Likewise, every team has its own strategy determined directly linked to the company strategy. Company strategy is not included in this study for confidentiality reasons, and only HR team strategy is given in the next sub-chapter.

Before explaining the strategy of the HR team, it would be more favorable to first explain how the company put its strategies into practice. When formulating and executing strategy, the company draws inspiration from the book "Playing to Win" written by Roger Martin and A.G. Lafley in 2013. According to the framework in the book, a strategy is the answer to five interrelated questions:

1. Winning aspirations

Winning aspirations are statements about the ideal future, they guide the company by reflecting motivations, and they set a frame for all the other choices.

2. Where to play

It is not possible for a person, team, or company to focus on everything at once. This question helps to narrow down the competitive field. The question is a perfect guide to determine which fields would best enable the win.

3. How to win

Defining the choices on how to win is as important as choosing the fields to play. To win, a company must decide what value proposition and competitive advantage it will offer to its customers.

4. Capabilities

A company might have a wide range of capabilities, but it is essential to select a set of capabilities that are important and reinforce each other to win.

5. Management systems

To ensure to complete the strategic choice cascade, support the choices made, leverage capabilities, and foster the strategy, the last step of the framework is defined as establishing management systems. Even though all previous steps have been completed, the strategy might fail without management systems. Therefore, management systems are crucial and needed to achieve the goals.

Since all choices affect and interact with each other, the framework is created as an integrated cascade of choices. However, choices are made at every level in an organization. In the case of the XYZ company, as stated before, every team has its own strategy determined directly linked to the company strategy. This means, all the strategies determined, and all the choices made within teams influence others. This situation corresponds to the nested choice cascades in the book, which covers the full organization (Figure 3) (Lafley and Martin, 2013).
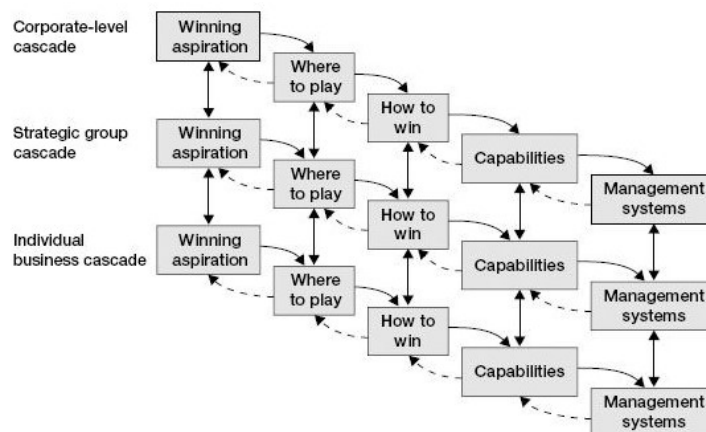


Figure 3 Nested choice cascades (Lafley and Martin, 2013)

This framework and the HR strategy have been taken into consideration while developing the project in chapter 10.

### 8.5.1 Human Resources Team Strategy

The HR strategy determined by the team and top management in accordance with the framework is as follows:

1. **Winning aspiration**: To become the best place where to grow personally and build new cloud solutions from business and technology perspective.

2. **Where to play**: The whole employee lifecycle: pre-hiring, hiring, onboarding, development, performance management, retention, offboarding.

3. **How to win**: Providing excellent experience during the hiring and onboarding process. Defining clear and transparent career paths and growth opportunities. Being capable of measuring the impact of HR activities.

4. **Capabilities**: To develop, execute and communicate bold concepts, which are innovative and rare. To fit the needs of employees and pair it with solutions. To set up an in-house automation system. To use third party applications.

5. **Management systems**: Describing the processes and setting internal rules that are missing in the company and necessary to fulfill tasks. From the HR perspective, these are payroll processing, development, performance appraisal, change of roles, succession planning, exit processes, and management without authority or control.

# 9 CURRENT SITUATION OF HR PROCESSES

## 9.1 Tools

Throughout the analysis, the tools used in the HR team will be mentioned numbers of times. Therefore, before describing the current situation, it would be more favorable to glance at the tools used by the HR team.

### 9.1.1 AppSheet

AppSheet is a low-code application development platform which allows users to create their own applications without coding knowledge. Users can create customized applications gathering cloud-based data sources. It is possible to integrate the platform with third party platforms such as Google Domains, Salesforce, API (Application Programming Interface), AWS (Amazon Web Services), and Azure. AppSheet uses Google Sheets and Forms, Excel on Office365, Excel on Dropbox, Excel on Drive, Salesforce, Apigee and many more cloud-hosted data sources as its database (AppSheet, 2021a). The platform offers rich data collection, machine learning intelligence, process automation, report generation, maps, and location services. Applications developed using AppSheet can be installed across tablets, smart phones, and desktop. (AppSheet, 2021b) The XYZ has its own application made on AppSheet for back office processes and applicant tracking system.

### 9.1.2 Google WorkSpace

Google Workspace (formerly G-Suite) provides businesses an integrated experience by gathering all Google products and tools to meet their needs and help them to work smarter with artificial intelligence (Google, 2021a).

### 9.1.3 PandaDoc

PandaDoc is a document automation software which enables users to create, customize, e-sign, and approve documents, agreements, proposals in a professional and timely manner (PandaDoc, 2021).

### 9.1.4 Notion

Notion is a documentation application and workspace which helps to keep databases, notes, materials, Kanban boards, roadmaps, tables, lists and tribal knowledge organized. It facilitates collaboration among colleagues. (Notion Labs, 2021)

## 9.2 Hiring

The hiring process consists of two phases: pre-hiring and hiring. Pre-hiring process is a brief process to prepare a position. When a vacancy occurs, team leaders, who take the role of "Hiring Manager" during recruitment, have to go through a position hire checklist and consider the following points:

- What is the name of the position?

- What is the reason for opening the question?

- What is the added value considering the company strategy?

- How will the employee be evaluated?

- Is it a long-term or short-term position?

- Is there any other way to fulfill this need?

- Preferred start date, budget, job description.

After filling their answers, they submit the form to the HR team. If the HR team approves the position, the HR Manager and Hiring Manager (team leader) come together and discuss in detail about responsibilities and competencies. This enables the HR Manager to better understand the profile sought, helps to eliminate unsuitable candidates in the first step of the recruitment process, and to continue with those who are qualified. After the meeting, the job advertisement is created and posted on the job portals used by the company: XYZ career website, LinkedIn, Cocuma, StartupJobs, Jobs.cz, and recruitment agencies if necessary.

Thereafter the second phase, the hiring process, starts. This process consists of five steps.

### 9.2.1 Round 0: Applicant Screening

The common feature of almost all the job portals in the market is that these portals keep the information of job applicants on their own database. Therefore, when a person wants to apply for a job advertisement, firstly they have to create a profile, fill in their basic information, and upload their resume to the portal. Secondly, they have to go to the job advertisement and click on the apply button. Companies, who also have profiles on the job portal, receive a notification that they have a new applicant.

Nevertheless, in the case of the XYZ company, when a person applies for a job position, the job portals send an automated email to the HR team's custom mail address which is created

for job advertisements. With the arrival of this email, there is a new profile created for that person automatically on custom applicant tracking software of XYZ made by using AppSheet. However, not all the information from the job portals are transferred. This profile on the AppSheet application contains only the following information: name and surname of the applicant, which job portal they applied from, and the link to the profile which is created on that job portal. Therefore, the HR Manager has to go to the profile of the applicant on the job portal and manually transfer all the details to the AppSheet application. Transferring the information to the application on AppSheet is important for the applicant tracking system and talent pool. Once all the information is transferred and the personal email address of the applicant is filled in on the system, a hiring questionnaire is automatically sent to the applicant to learn more about them, their experiences, and expectations. In this questionnaire, the candidate is asked questions about their motivation for applying for the position, cooperation preference, preferred start date, salary expectations. The questionnaire provides the HR Manager all the information needed for the first round. However, again, the HR Manager is supposed to go through the answers personally and make the decision.

The purpose of this round is to determine whether a candidate is qualified for the job and deserves an interview.

### 9.2.2 Round 1: Introduction Meeting

Round 1 is the first step of the hiring process of candidates who passed the screening step. As sufficient information is collected through the hiring questionnaire, more details about the position and responsibilities are discussed between the candidate, HR Manager and Hiring Manager at this step. The purpose of this round is to understand if the candidate has the expected competencies and potential and can be an added value for the team.

The session starts with the HR Manager introducing the company briefly, and then the Hiring Manager explains the position and expectations. The Hiring Manager leads the interview with questions. While the Hiring Manager measures the candidate's technical competencies and suitability for the position, the HR Manager measures the candidate's soft skills such as communication. The candidates can ask their questions at the end of the interview if any. The interview usually takes 45-60 minutes, and can take place in the office, in a cafe or in an online environment.

### 9.2.3   Round 2: Case Study/Skill Set & Gallup Test

Round 2 consists of a technical check to verify the knowledge and hard skills of candidates who successfully passed the first round. The purpose of this round is to evaluate if the candidate has the expected and relevant technical skills and experiences and can help the team grow by being an added value. This is done by giving a case study to the candidate, or by requesting an open source or portfolio from the candidate.

After an unfortunate incident, the HR team decided to move with open source or portfolio instead of case studies in this round, unless the candidate has nothing to provide. This incident occurred during the hiring process of a candidate who was referenced by one of the XYZ employees. The candidate was interviewed for a cloud architect position, he successfully passed the first round. HR Manager and Hiring Manager, who wanted to check the candidate's hard skills, avoided case studies to speed up the process and asked the candidate for open source. However, the candidate preferred the case study, stating that he does not have much work to provide. A case study which is created by the Hiring Manager and the team was sent to the candidate. After the candidate completed the study, the colleague responsible for checking case studies in the team gave feedback to the Hiring Manager and HR Manager that "it is a disaster". "The candidate is not able to work in Terraform and his work does not make any sense", he said. Based on this feedback, the HR Manager got back to the candidate and stated that he only needs to improve his skills in Terraform, otherwise they are satisfied with everything else, and once he does this in six or nine months, they can reconsider hiring him. Two days later, another colleague who is cooperating with the company as a contractor checked the study and stated that "it is good". But the candidate was already rejected based on the first feedback. To prevent such an incident from happening again, the HR team decided not to use a case study during the hiring process unless it is necessary. This event is also one of the reasons that give rise to the need for systematic education of employees.

In addition, the Gallup test (also known as the CliftonStrengths assessment) is sent. The purpose of the test is to reveal the strengths of the candidate, and determine their suitability for the position, team, and company. The Gallup test is an online assessment that measures the natural patterns of thinking, feeling, and behaving of people. The test consists of 177 paired statements, and the test taker chooses the one that best describes them on a linear scale (Figure 4). (Gallup, 2021a)
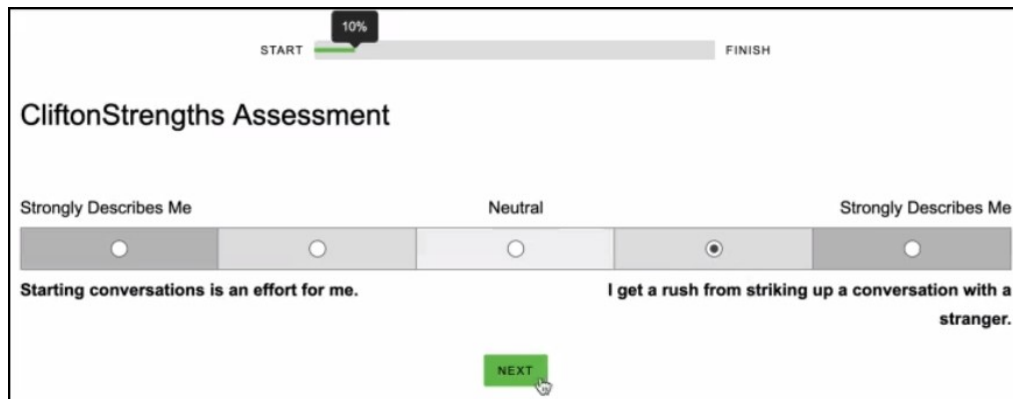
Figure 4 A sample CliftonStrengths question (Gallup, 2021a)

The test helps to uncover people's talents, strengths, and potential weaknesses and classifies them into 34 themes sorted into four groups (Table 1). At the end of the assessment, a comprehensive report is sent to the person on how they can maximize their strengths and manage their weaknesses. (Gallup, 2021a)

Table 1 The 34 CliftonStrengths themes (Gallup, 2021b)

| Strategic Thinking | Relationship Building | Influencing | Executing |
|---|---|---|---|
| -Analytical<br>-Context<br>-Futuristic<br>-Ideation<br>-Input<br>-Intellection<br>-Learner<br>-Strategic | -Adaptability<br>-Connectedness<br>-Developer<br>-Empathy<br>-Harmony<br>-Includer<br>-Individualization<br>-Positivity<br>-Relator | -Activator<br>-Command<br>-Communication<br>-Competition<br>-Maximizer<br>-Self-Assurance<br>-Significance<br>-Woo | -Achiever<br>-Arranger<br>-Belief<br>-Consistency<br>-Deliberative<br>-Discipline<br>-Focus<br>-Responsibility<br>-Restorative |

Every employee within the company has Gallup test results. These results are also combined into team matrices and a company matrix. While these matrices help to easily identify missing skills in teams, on the other hand, they also help to put a diversified team together which can cooperate in the best way.

Since the missing talents in the teams are already known, or certain positions require certain skills, the profile of the ideal candidate sought is determined in advance at the pre-hiring phase. For instance, the profile sought for the position of Chief Marketing Officer, which has been open for a long time, was determined as "strategic thinker", as the position requires a person who will initiate the marketing strategy, and have to make decisions in the direction of company strategy. Likewise, for HR team or Customer Success team positions, it is usual

to seek a person whose biggest strengths are in the relationship building category. Therefore, even though the candidate has relevant experience, if they do not have the expected profile or strengths for the position, or do not fit with the team matrix, the candidate is rejected.

### 9.2.4 Round 3: Technical Team Call

Round 3 is for those candidates who successfully passed through previous hiring rounds. In this round, the candidate meets the entire future team or chosen representatives. The meeting usually takes 45-60 minutes, and can take place in the office, in a cafe or in an online environment. One team member is responsible for leading the meeting.

The purpose of this meeting is to get the candidate to meet the team and see if they are a good fit. During the meeting, the case study is elaborated like single pieces of a puzzle and then put together with the candidate. This way, candidates have a chance to present their experiences, skills, and achievements while the team can get answers to question marks they have.

The meeting starts with the introduction of the team and responsibilities, followed by the time given to the candidate to introduce themself. Then, the candidate is provided with feedback on the case study and asked additional questions. Sometimes, these additional questions might be in the form of changing details in the case study to see the candidate's way of thinking and reasoning. The meeting ends with a Q&A session. If it is decided that the candidate fits well within the team, has the relevant technical knowledge, and can bring any added value to the team, the process continues with the fourth round.

### 9.2.5 Round 4: Gallup & Talent Evaluation

In this round, the candidate has a session with the HR Director, who is also a certified Gallup trainer. The profile of the candidate is already known; therefore, their motivations and workstyle can be predicted thanks to the Gallup test. However, if there are any questions and possible doubts which came up from previous hiring rounds, they are clarified in this round. In this respect, the meeting is of the nature of an interview.

The HR Director asks about some particular situations to evaluate the candidate's awareness of their own skills. He informs the candidate about how they can leverage their strengths and how they can develop their weaknesses. In this respect, the meeting is of the nature of the consultation.

The meeting takes 30-45 minutes and takes place as an online interview. Once the candidate's suitability is assured, the process continues with the fifth round.

### 9.2.6 Round 5: Talk with the CEO/CTO (Inspirational Talk)

Although not always necessary, in most cases, especially for more senior or technical roles, the CEO or CTO meets the candidates. It usually lasts 20-30 minutes, and takes place in the office, in a cafe or in an online environment.

The purpose of this round is to introduce company vision, values, strategy, set expectations, and provide candidates with the mindset and direction of the company. It can be considered as a small onboarding session, excitement for the candidate, and provide them with some insight to the company. However, the CEO and CTO have the right of veto in any rounds, therefore their approval is required to make a job offer.

### 9.2.7 Job Offer

When a candidate successfully completes all the rounds, a specific job offer is sent by email, together with the offered position, job description, start date, type of cooperation (full-time/part-time, employee/contractor), salary, and a list of benefits offered. When the candidate accepts the offer, the onboarding process starts. When the candidate denies the offer, a call or an interview is held to understand the reason. If necessary, the job description is updated and then the new hiring process starts.

## 9.3 Onboarding

Onboarding process consists of two steps: company onboarding and team onboarding. Onboarding starts at the moment the candidate accepts the job offer and lasts until the end of the trial period, which is three months after joining the company.

The company onboarding usually lasts two weeks. At the end of this period, an onboarding questionnaire is sent to the newcomer to get feedback about their onboarding journey so far and ask whether there is anything that the HR team can help or improve.

At the end of the trial period, another questionnaire is sent to ask the newcomer if they have everything covered, if the job meets their expectations or not, and if they want to continue in the company.

Once per quarter, all newcomers attend a meeting with the HR team to share feedback on their first months in the company. The purpose of these newcomer meetings is to strengthen the communication and engagement of people, and help the company improve.

### 9.3.1 Company Onboarding

Once the candidate accepts the job offer, the HR Manager sends an email thanking them for the time and effort they put into the hiring process, and confirming the start date, official position, job description, remuneration, with an attached onboarding plan. For each employee hired, a particular onboarding plan on Google Sheets is created which includes five main topics:

- Most important people to know for the position

- Processes the person should be familiar with

- Products to know

- List of shared platforms used in the team and across the company

- Shadow calls with colleagues and customers to absorb the approach.

The plan consists of an average of 120 tasks for a typical technical position. For each completed task, the person receives one point. The overall percentage of earned points must be at least 85% to successfully pass the trial period. In some cases, if agreed on the possibility of salary increase in advance, it must be 95% to be entitled for the salary increase. An exemplary onboarding plan is presented in Appendix P I.

Meanwhile, the entire HR team cooperates in the onboarding process and completes the necessary preparations for the newcomer. The HR Manager informs the Back-Office Manager about the arrival of the new colleague and provides the same basic information which is sent to the newcomer. The Back Office Manager sends an email to the new colleague, and communicates about the signing of the contract and other documents such as the Non-Disclosure Agreement (NDA), ISO/IEC 27001 Information Security Management System (ISMS), consent to the processing of personal data and photographs. Right after, she sends an email to the whole company introducing the newcomer with a photo, the position, and a direct speech from the newcomer. Employee Relations Specialist prepares a welcome package which includes branded items of the company. At the same time, the HR Manager prepares team leaders for their onboarding sessions with the newcomer, which is the second step of the onboarding process.

### 9.3.2 Team Onboarding

All team leaders meet the newcomer to introduce their teams, responsibilities, and explain how the newcomer's team cooperates with their team. Although there is no specific structure, the meeting usually takes 30-45 minutes.

The newcomer's own team provides all detailed information, prepares a handover protocol from previous employees in that position, and prepares new tasks and goals to assign. They invite the newcomer to all team meetings and company events. Nevertheless, to facilitate the adaptation process, every newcomer is matched with an onboarding buddy who introduces them the office, tells them about unspoken rules and answers their questions.

## 9.4 Learning and Development

The company does not have any systematic learning and development (L&D) process. Instead, the cost of conferences, training and certifications are fully funded.

Google and Amazon request certain certifications from those who work in cloud engineering and architecture positions and add new certification requests occasionally. The Vendor Manager notifies the employees and the HR team about these updates. Step-by-step guidelines on how to get the new certifications are created and sent to employees. Besides, since personal career growth is taken seriously in the company, employees are encouraged to excel in any specific topic they want and supported in this aspect. In addition to these, sometimes, struggles within the teams lead to the need for specific training. In any of these cases, the company directly covers or reimburses the training costs.

On the other hand, the company lacks senior people within the teams. It is understood from the feedback and some problems within the teams that employees who are considered as senior are unable to define systems or set standards, which indicates that they actually have a medium level expertise. Furthermore, when a senior is hired, they do not stay long because management systems which should already exist do not exist. They choose to leave since they do not want to build it from scratch.

As a result of the lack of management systems in the company, employees do not have a bigger picture of all the responsibilities and competencies which are needed to perform in their role. Therefore, the HR team is currently working on a set of rules for seniority, management systems, and successful career development.

The first step of planning systematic learning is to create a competence matrix. The matrix brings all the skills and knowledge that team members should have together and provides an overview of what competencies the team might be lacking. The competencies are identified and categorized by team leaders and members and put into a table with the names of team members. Every team member fills their own column and evaluates their skills using the following key in figure 5. The cells are colored from light to dark colors to easily distinguish without concentrating on numbers. An exemplary competence matrix is presented in Appendix P II. (KaTe, 2013)

| Grade | Name | Description | Color |
|---|---|---|---|
| 0 | No Competency | I know nothing about this | White |
| 1 | Some Knowledge | I know something about this and after some further reading or instruction I am able to perform a simple task | Pale color |
| 2 | Working Knowledge | I can perform daily tasks | Vivid color |
| 3 | Good Competency | I can easily complete complex tasks | Dark color |
| 4 | Expert | I know a lot about the subject. If the competency is a part of the solution the team is building, this would be the author or co-author | Black |

Figure 5 Graduation scale for the skills, (KaTe, 2013)

The company aims to have a competence matrix for each position at the end of this planning. Based on the competence model matrix, the HR team will be able to plan systematic learning to increase skills in the teams and provide the employees a clear path for career developments and gaining seniority.

## 9.5 Employee Satisfaction

Employee satisfaction is measured through Net Promoter Score (NPS) and regular interviews.

Net Promoter Score (NPS) is a metric designed by Frederick F. Reichheld with the assistance of Satmetrix, a software development company, and Bain & Company, a management consultancy company. The metric is used to measure customer loyalty over a single question, "How likely is it that you would recommend [company X] to a friend or colleague?" Respondents answer the question with a score on a scale from zero to ten, where zero means "not at all likely" to recommend, five means "neutral", and ten means "extremely likely". The designers of the metric divided the scale into three groups: those who answered between zero and six are classified as "detractors", those who answered seven and eight as "passively satisfied", and those who answered nine and ten as "promoters". (Reichheld, 2003)

Promoters are loyal enthusiasts who are satisfied with the company and products, and very likely to recommend it to other people through positive word-of-mouth. Passives do not promote the company or products to other people although they are satisfied. Detractors are not satisfied with the company or products, and they are likely to damage the brand through negative word-of-mouth. (NICE Systems, 2021)

NPS is calculated through following formula:

$$\% \text{ Promoters} - \% \text{ Detractors} = \text{Net Promoter Score}$$

Even though the NPS metric is designed to be used for customer satisfaction, the HR team of XYZ company uses it to check the temperature of satisfaction amongst employees every month. The NPS question is asked to the employees as "How likely are you to recommend us to someone, who is interested in working in our company?".

After the company implemented the remote-first approach in March 2020, new statements and open-ended questions were added to the survey:

- I understand and believe in the mission and values of the company.

- I trust the leaders of the business.

- How do you feel right now?

- What could we do to make you say 'WOW'?

The respondents are asked to rate the statements on the same scale, and the promoter score is calculated for every question separately. Open-ended questions are asked only to better understand the employees' perspectives and get feedback on topics to improve.

Second way to measure employee satisfaction is the regular one-on-one interviews held by the HR Manager with each employee twice a year (in the second and fourth quarters). During the 30-minutes meeting, the HR Manager discusses deeper the employee's feelings and satisfaction within the company. After all interviews are completed, the most common topics are summarized in a brief presentation and shared with the whole company. Starting from the most common and important problem, next steps for requirements and improvements are taken.

## 9.6 Rules and Policies

The Back-Office Manager and Admin Assistant are responsible for administrative processes such as attendance, leave day, vacation, parental leave, business travel, and financial rules.

Team leaders are partially involved in the processes. All these processes are automated, and only the employee's request creation and the process owner's approval need to be done manually. Employees submit their requests regarding these processes to HR through the company's AppSheet application after discussing with the team leaders. When a new request is created in the system, the person responsible for the process i.e. team leader or Back Office Manager receives notification. If they give approval, the transaction is completed.

## 9.7 Offboarding

The offboarding process is mainly run by the Back-Office Manager. When an employee decides to leave the company, the Back-Office Manager prepares the contract termination, and prepares compensation, benefits, and tax documents.

Meanwhile, an exit form is sent to the employee. The form focuses on the employee's journey in the company, the company culture, topics that need improvement, the reason for resignation, and whether the employee's expectations were met. Additionally, the HR Manager plans an exit interview with the employee. To find out if there is a pattern between the resignation reasons of the people who resigned, the employees are always asked the same questions.

To prevent gossip, the team leader informs the team, and announces their colleague's departure. If the employee is in a close relationship with clients, the team leader communicates with them. An action plan for notifying those clients is created to manage the client handoffs. Team leader works with the employee to identify who will be the replacement, prepare information for handoff, and create a to-do list to determine how the ongoing projects will be delivered. (Lucid Content Team, 2021)

Employee returns the company equipment and assets, clears personal space of use i.e. desk and lockers. Employee's access to internal systems and email is removed, passwords of company accounts are changed. The Back-Office Manager updates the organizational chart. Finally, a farewell party is planned for the employee. A personalized gift with a thank-you note is given. (Lucid Content Team, 2021)

## 9.8 Employer Branding and Social Media Presence

XYZ has only Twitter, Facebook, YouTube, and LinkedIn accounts.

As of April 2021, the company has 158 followers on Twitter. The vast majority of its followers are current and former employees, while the rest are customers and some people who have participated in cloud events. With 403 likes, the company has the same profile of audience on Facebook: employees, customers, and cloud enthusiasts. The YouTube channel has 170 subscribers, whose profiles are not possible to identify, as YouTube shows only subscribers who have chosen to make their subscriptions public (Google, 2021d). Compared to other social networks, LinkedIn has more followers (843 people), and is holding potential to reach more people as a professional network.

All social network accounts share the same content except YouTube: event announcements, sharing blog posts added to the company website, and reminding of open positions. The content of the YouTube page consists of webinars and videos of events for marketing and community building purposes.

On the other hand, the posts are not shared regularly. The frequency of posting takes sometimes several times a week, sometimes once a month, or even longer. While the posts get interactions from one to five people on Facebook and Twitter, this number doesn't exceed 20 on LinkedIn. The videos in Czech language and specific content focused on cloud computing have between 50 and 200 views on YouTube, while videos about Google Workspace in English language appear to have reached thousands of people.

The company also has a podcast series published monthly by two employees. However, as with other networks, frequency of shares is not consistent here as well, and sometimes the podcasts are shared every two months.

# 10 DEVELOPMENT OF HUMAN RESOURCE MANAGEMENT SYSTEM

In XYZ, it is believed that the best decisions are made when they are backed by data, and it is argued that being lazy enough to automate recurring and non-value adding tasks is in the company's DNA. However, the reality is disparate.

In terms of the HR team, the biggest problem experienced is lack of automation. Only back office processes are automated, and there is automation in recruitment to a certain extent which is not sufficient. Since the HR team is constantly busy with transactional and traditional HR activities, they cannot allocate the necessary time to strategic, transformational activities which add value to the organization. Also, as a result of the lack of automation, the team is not able to measure the consequences of its activities.

According to the HR strategy set, the company wants to become the best employer in the cloud sector, yet it does not follow developments and trends in human resources, it is not data-driven, and tasks are done traditionally. Developing an HRMS can help both to achieve the goals set in the HR strategy, and to meet the HR team's needs and solve problems. In this chapter, an HRMS project is developed over the five main phases mentioned in the fifth chapter.

## 10.1 Planning

### 10.1.1 Project Manager

There are many people and companies providing consultation in human resources and hiring a consultant as project manager can be considered as the first option. This would provide the best project management; however, it is the most expensive option and since a consultant is an outsider, they will lack knowledge on the company's DNA, mission, values, and needs.

Second option can be hiring a project manager. This would be more affordable than the first option, however, considering the hiring process to find the right person and onboarding them might take at least a few months before starting to work on the project. Besides, hiring for one project will not justify the position since there are no other projects or need for another team member in the HR team.

Third and the most reasonable option is to transfer someone who has project management experience within the company. Since XYZ is an IT company, it has employees with both

project management and software knowledge, especially in Production Services teams. However, the project manager of this project should have excellent knowledge of the company's mission, strategy, processes, needs, and human capital. And only the HR team has the most comprehensive knowledge and understanding in this respect. Therefore, the HR Manager is the person who can perform this task in the best way due to their scope of responsibilities. As there are two HR Managers in the company, the one who is more experienced in project management would be better suited to this role.

### 10.1.2 Steering Committee

Steering committee helps to determine project scope and assists the project manager in decision making. People who should be included in this committee are:

- whose processes for which they are responsible will be included in the project or affected by the project,

- people with technical knowledge,

- people whose approval is needed for the implementation of the project,

- people who can assist with potential pitfalls.

All members of the HR team should take part in this committee, as they take care of HR processes, are aware of the needs of employees, and will use the system more often than anyone else.

As top management support is important for the success of the project, it would be appropriate for the CEO to be on the committee. He will especially maintain budget control throughout the project. The CEO is known to have a busy schedule; hence it is decent if he cannot attend every meeting. However, he should be included in meetings where important decisions will be made.

Employees who have software development knowledge and more technical knowledge than the HR team should be included in the committee. Having more than one person will allow the committee to approach the project from different perspectives. These people will assist the project manager and committee on opportunities and limitations in physical design and implementation.

Since sensitive information of the employees will be kept in the system for record-keeping and data analysis, acting within data governance and legislation is a crucial issue of the

project. Therefore, even though not involved in the committee, company lawyers should be consulted on issues such as privacy policy, data consent, ethical issues, and transparency. The Back-Office Manager, who is in constant contact with company lawyers due to her responsibilities, can convey the issues discussed in the committee and legal needs to the lawyers. Also, a person from the security team should be included to guide implementation in this regard.

### 10.1.3 Implementation Team

The implementation team assists the project manager to complete the actual software implementation. 'A good configuration for the implementation team includes both functional and technical personnel.' While functional personnel are drawn from the HR team, technical personnel include HRMS specialists, software developers, hardware experts, database administrators and system analysts. Functional personnel take part in the team to interpret HR processes and the needs and expectations of the HR team into the technical language of the technical personnel. (Bedell, Canniff and Wyrick, 2009)

The functional personnel to be included in the implementation team will be the same regardless of the solution to be applied, i.e. in-house development, off-shelf software, or third-party solutions. As the functional personnel must have extensive knowledge about HR processes, they should be drawn from the HR team. Ideal personnel would have technological skills to some extent in order that they can explicitly interpret HR processes into the language that technical personnel can understand. Functional personnel should fulfill this by creating a process model which describes and represents HR processes.

The technical personnel to be involved in the project and their responsibilities will vary according to the solution to be implemented. If the solution is to be developed in-house, technical personnel will be responsible for designing and developing the actual software, data migration and configuration, implementation, maintenance, and data security. If the solution is to be developed by third parties, the implementation team will consist of their employees collaborating with XYZ employees. If an off-shelf solution is to be used, the vendor might take care of everything for its customer or might collaborate with XYZ employees to some extent.

### 10.1.4 Management Support

The company's transformation methodology emphasizes the commitment of top management as a key success factor for effective implementation of a project, and top management acts with this awareness. They have full confidence in their employees and are honest and respectful. They support their employees in every way possible and guide them when necessary. They are usually not directly involved in projects but reported to. However, regardless of what the project is, they are responsible to allocate sources, align the budget and remove obstacles. They are decision-makers on important issues. It is expected that their role in this project will be in this direction as well.

### 10.1.5 Change Management

Change management is an important element for the effective implementation of a project and for the change in the way the organization works.

As mentioned in chapter 8.4, one of the company's core values is flexibility, and the employees live by this value. Therefore, it is not expected for employees to resist the change, rather they are expected to be satisfied and adapt quickly. However, change management does not mean managing only resistance or acceptance. It also covers topics such as introducing the new system to the users, educating, and training them on how to use it, and what to use it for.

Project contains several important issues that need to be clarified with change management:

- Why was such a system needed?

- What functions and needs will the system be used for?

- What benefits will the system provide to employees?

- When and how will the system be implemented?

- How will the transition be?

- How to use the system?

- What data of employees will be collected and why?

- How and for what will the collected data be used?

It is crucial to keep the communication open and clear in order that employees will not have any hesitations. Change management should be owned and run by the change management team in the company.

### 10.1.6 Getting the New System into Use (Go Live)

Employees use the current HRMS only to perform transactions regarding rules and policies mentioned in chapter 9.6. Other than this, HR Managers use the system for applicant tracking. Thus, there is no use of the system to the extent that requires a gradual transition. Once the new system is ready, it can be implemented immediately.

### 10.1.7 Potential Pitfalls

It is not possible to predict precisely what might go wrong during the development of a system, therefore most common pitfalls are reiterated here with a combination of experience and quotation from Bedell, Canniff and Wyrick (2009):

- 'Poor planning

- The incomplete steering committee or steering committee without top management support

- Implementation team problems

- Failure to adequately assess the politics of the organization

- Insufficient process mapping

- Scope creep

- Poor implementation of or insufficient change management' (Bedell, Canniff and Wyrick, 2009)

- Failure to analyze problems and needs properly

- Misidentifying goals

- Setting unrealistic goals

- Mismanagement

- Failure to manage the budget

- Inability to manage crises

- Inability to manage time

- Misuse of resources

- Communications gap

- Inflexibility

- Glitches during design and implementation.

### 10.1.8 Project Evaluation

An evaluation standard should be established to evaluate the progress of the project during development and to measure success after implementation. This will establish a consistent method for the evaluation of the project. At the same time, reports will serve to transfer the lessons learned from this project to future projects.

During the development, the steering committee to hold performance meetings weekly will make it easier to monitor the status of the project, predict potential hazards, and stick to the timetable. The template created for the weekly performance meetings can be found in Appendix P III.

After the implementation, lessons learned should be recorded before closing the project, and the closing checklist should be reviewed, which can be found on Appendix P IV. Also, the steering committee should meet once a quarter to check the status of the system and discuss any improvements that need to be made.

## 10.2 Analysis

The purpose of this chapter is to list all problems that the HR team faces both within the team and throughout the company, determine current system performance issues, needs, project scope, and tools and techniques to be used during the development process.

### 10.2.1 General Problems in the Company

**Communication**: According to the employee satisfaction interviews held in the first half of 2019, one of the biggest problems in the company was stated as communication problems. In all the interviews held from then until the fourth quarter of 2020, it was stated every time that communication is not open and transparent, there are no rules for communication, there are too many communication channels, and there is no interaction between top management and other employees. After the last interview held in the fourth quarter of 2020, an action

plan was created and started to be implemented, however, it is necessary to wait for the interviews to be held in the second quarter of 2021 to see the results. Nevertheless, there is an important signal that should not be ignored. According to the results of the last NPS survey conducted in February 2021, transparency and open communication problems are still on the agenda of employees. Another feedback confirming this situation is the exit interviews held with three employees who wanted to leave the company in March 2021. One of the employees stated that it is difficult to find information due to the number of channels used in the company. Another one of the leaving employees stated that some colleagues are not able to use English competently and this causes communication problems. When they speak in Czech, it is obvious that the person has knowledge and is well prepared for a subject and has a background for their arguments. On the contrary, when they speak in English, they seem to be the opposite way since they are not able to explain it clearly. This feedback verifies the request for English language support to the employees, which was expressed in the first half of 2020, should not be ignored. Third one of the leaving employees stated that since there are no expectations set before, there are always arguments about work being undone, and he considers this as a communication problem. As the most recent feedback available, these exit interviews and NPS results clearly show that communication problems are still ongoing, and how helpful the action plan implemented at the end of 2020, remains as a question mark.

**Problem Solving**: Another company-wide problem is that problems and issues are expressed and discussed, however, forgotten after another subject arises. Employees think that the agenda changes very quickly, thus the previously discussed issues are forgotten, and no action is taken, and the promises made are not kept.

**Remote First Approach**: Finally, another important problem that is often mentioned and concerns the whole company is related to the remote working approach. During the Covid-19 epidemic, remote work emerged as a necessity, but in this process, the traditional business approach was only conveyed with a video camera. However, just using instant communication tools and attending meetings through video calls is not enough for remote working. It is necessary to create a working model suitable to this approach. This applies to XYZ as well. Although the remote-first approach is generally appreciated, there is dissatisfaction with benefits, work-life balance and engagement. The common complaints of the employees are that:

- the IT equipment they have at home is inadequate,

- calls and meetings take a lot of time, therefore there is no time left to do the actual work,

- they have difficulty in maintaining work-life balance,

- people only attend meetings or calls for business purposes, and the human touch decreases due to the lack of space for informal meetings,

- staying at home due to the Covid-19 outbreak is negatively affecting their mental health and well-being.

### 10.2.2 Analysis of Current HR Processes

#### 10.2.2.1 Hiring

The HR team worked on the hiring process for a long time until it reached its ideal version, combining the feedback from employees with the lessons learned from each hiring experience. The HR team thinks that the final stage of the process, described in chapter 9.2, is the most ideal. Although the employees still find the hiring process long, they agree with the HR team that each step in the hiring process serves a different purpose and is necessary, and they do not see any better way to do it. Therefore, no changes will be made in the process unless different needs arise.

There are different problems at every step of the hiring process. These can be listed individually as follows:

**Applicant Screening**: The most important problem in the applicant screening step is the lack of automation. Since there is no proper automation, HR managers have to check up on everything manually, and naturally, it is time-consuming. It is a huge waste of time for the HR Managers to transfer all candidate information from job portals to XYZ AppSheet application one by one and evaluate the curriculum vitae (CV) and answers of the hiring questionnaire. These are very simple tasks that can be automated and even evaluated with artificial intelligence.

Second important aspect of the transferred information is the talent pool. The CVs of the candidates in the talent pool are kept on Google Drive, and their profiles, which are created when they first applied for a position, are kept on the AppSheet application. The HR Manager can view a profile that has a direct link of CV by clicking on them. However, there is no effective filtering tool for searching a specific skill amongst all profiles. It is possible

to scan all profiles using a keyword, but the profile does not show up in results unless the keyword is written exactly the same. This filtering is not ideal compared to other applicant tracking software on the market, and it can be made more efficient.

Although this step provides an enormous amount of data that could help to improve the hiring process and increase the efficiency of the process, the HR team does not get the best out of it.

In today's competitive and fast-pacing world, companies that ignore data and are managed with instincts cannot survive. The HR department in any company can be the department with the most data, regardless of structured, unstructured, and/or semi-structured. However, human resources managers could not go beyond simple charts and graphs for decades. Simple charts and graphs bring no added value to a company, and the time spent is not worth it. Companies need to go beyond simple tables and graphs and perform data analysis in every part of their business.

Data analysis can play a critical role in detecting implicit problems and finding patterns. To demonstrate how easy yet enlightening data analysis is, the efficiency of the hiring process of XYZ is measured with three different metrics: source of hire, time to fill, and time to hire.

Source of hire is a metric used to determine which recruitment channels are the most effective for hiring (Miller-Merrell, 2018). Since all the data required for the source of hire metric is available in the XYZ AppSheet application, it has been analyzed manually after exporting to Google Sheets. The available data belong to the year 2020 and the first quarter of 2021. With this metric, the effectiveness of recruitment channels was measured by answering questions such as "how many applications were received from which recruitment channel, and how many of them were offered jobs.

As can be seen in figure 6, the candidates to whom the most job offers were made and who were included in the talent pool are the people referred by XYZ employees. That means, referrals are the top source of hire for XYZ. Nevertheless, further metrics can be used to see how high-quality candidates this source provides. For instance, how long do referred employees stay with the company, or what is the satisfaction of the employees who give references and are referred. Further questions such as these can provide clues about how to make better use of the source. If the quality of this source is as high as its quantity, creating a referral program, which does not currently exist in XYZ, can provide an effective use of the source.
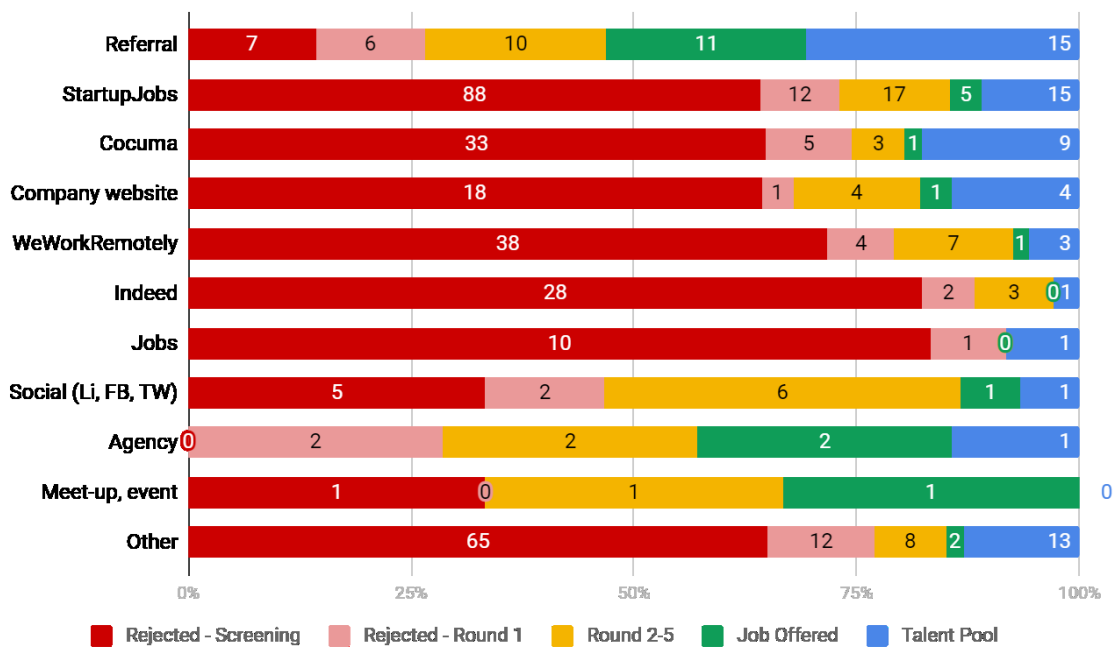
Figure 6 Source of hire (own processing)

On the other hand, since the rejection rate is very high in sources such as Indeed and Jobs, it is necessary to examine why these sources provide poor-quality candidates. Typical reasons might be the channel does not address the right audience, or job advertisements of XYZ do not attract possible candidates, or the algorithm of the channel does not show advertisements to candidates with the right profile. After finding the reasons, the channels that do not pay off should be cut-off, and the hiring budget should be reallocated.

In the dataset, which is exported to Google Sheets, the source from which 100 candidates applied was categorized as other. A hundred is a significant amount which should not be collected in a single category. As this will not give a reliable result, these channels should be separated and evaluated this way in the future. The channels amongst those that could pay-off the hiring efforts can be used, if there is any.

Time to hire is often used as a synonym for time to fill, however, they are different metrics. Time to fill is the time from the moment the position is created until the candidates accept the offer. Time to hire is the time from the first moment the eventual hire contacted the company until the job offer is made (Zojceska, 2019; Bika n.d.(b)). The differences between the two of these metrics can be found in table 2.

Table 2 Differences between time to hire and time to fill, (Zojceska, 2019)

| | **Time to hire** | **Time to fill** |
|---|---|---|
| **Question** | Once you have candidates for a job opening, how many days does it take to hire someone? | How long is your whole recruitment process, from creating a new job opening to hiring someone? |
| **Starting point** | When candidate enters the pipeline | Job opening published |
| **Information about** | Selection process | Whole hiring process |
| **Purpose** | Efficiency | Planning |
| **Length** | Shorter | Longer |

Time to fill was measured for 7 positions in XYZ in 2020 and the first quarter of 2021:

Table 3 Measured time to fill, (own processing)

| **Position** | **Open Time** | **Number of Applicants** | **Number of hired** |
|---|---|---|---|
| Cloud Operations Associate for Infrastructure | 46 days | 13 | 1 |
| Operations Coordinator | 47 days | 2 | 1 |
| Chief Marketing Officer | 228 days | 136 | 1 |
| Account Executive | 86 days | 14 | 1 |
| Sales Development Representative | 64 days | 7 | 1 |
| Customer Development Manager | No job posting | 1 (Interview from referral) | 1 |
| Project Manager | No job posting | 1 (Interview from talent pool) | 1 |

Open time represents the time to fill for each position, starting from the day the job advertisement is created until a candidate is hired. Exceptionally, there was no job posting created for Customer Development Manager and Project Manager positions. For these positions, the HR team contacted a referred candidate and a candidate from the talent pool. The hiring process went smoothly for both candidates and these candidates were hired

without the need to post a job advertisement. Excluding these two positions, the average time to fill is calculated as 94 days ((46+47+228+86+64) / 5).

Since XYZ is a remote-first company and has employees all over the world, it is beneficial to compare the average time to hire not just with the Czech or European market, but with other markets as well. According to benchmarks of key hiring metrics created by Workable, average time to fill IT roles in Europe is 85 days, while it is 56 days in UK & Ireland, and 68 days in the global (Bika, n.d.(a)). According to LinkedIn 2017 Global Recruiting Trends Report, 30% of companies were able to fill a position in less than a month, while 50% take one to two months (Bernard, 2016). A leading research conducted in Dutch labor market in 2019 shows that the average time to fill is 62 days amongst Dutch companies (Intelligence Group, 2016). The Jobvite survey conducted in 2021 in the U.S. reveals that one of the most important recruiting priorities for the next year is to improve time to fill (Ranosa, 2020)

Time to hire was measured for the same positions. To see the picture as a whole, the sources used in the application are also included:

- The candidate hired for the Cloud Operations Associate for Infrastructure position first applied on 02.09.2020. Since the job offer was made on 16.10.2020, the time to hire was 44 days. The hired candidate was referred.

- The candidate hired for the Operations Coordinator position first applied on 02.09.2020. Since the job offer was made on 7.10.2020, the time to hire was 35 days. The hired candidate was referred.

- The candidate hired for the CMO position first applied on 03.11.2020. Since the job offer was made on 28.01.2021, the time to hire was 96 days. The hired candidate was found by the hiring agency.

- The candidate hired for the Account Executive position first applied on 26.01.2021. Since the job offer was made on 04.03.2021, the time to hire was 37 days. The hired candidate was referred.

- The candidate hired for the Sales Development Representative position first applied on 26.01.2021. Since the job offer was made on 19.03.2021, the time to hire was 52 days. The hired candidate used the StartupJobs channel.

- The candidate hired for the Customer Development Manager position first applied on 11.02.2021. Since the job offer was made on 03.03.2021, the time to hire was 20 days. The hired candidate was referred.

- The candidate hired for the Project Manager position first applied on 21.07.2020. The candidate was taken to the talent pool after the second round. The candidate was contacted on 15.10.2020 when there was a new position. The hiring process continued from the third round, and a job offer was made on 10.11.2020. Time to hire was 42 days in total. The hired candidate used the StartupJobs channel in the first application.

Average time to hire is calculated as 46 days ((44+35+96+37+52+20+42) / 7). If measured on a source basis, it is seen that the average time to hire of referred candidates is 34 days ((44 + 35 + 37 + 20) / 4), and the average time to hire of those who use the StartupJobs channel is 47 days ((42 + 52) / 2). According to this simple calculation, referred candidates are hired faster than candidates applied from another channel. Yet, it is not dependable to make this calculation out of only seven hires. For a healthy result, data should be collected at every recruitment and analyzed regularly.

However, the current average time to hire for XYZ with available data is higher than Europe and the global average. According to benchmarks of key hiring metrics created by Workable, the average time to hire in Europe is 36 days, while it is 28 days in UK & Ireland, and 33 days in global (Bika, n.d. (a))

**Introduction Meeting**: Based on the feedback from hires, the only problem in this step is that candidates are only given a piece of brief information about the position and expectations, but not about the company, the story, how many customers it has, and its vision and mission.

**Case Study/Skill Set & Gallup Test**: The most problematic aspect of this step is that case studies cannot be evaluated systematically. Employees are responsible for evaluating the case studies of candidates who will join their teams, yet they do not have any knowledge about systematic evaluation of them. Consequently, incidents as mentioned in chapter 9.2.3 happen.

Another problem faced in this step is that the HR team does not provide detailed feedback if the result is positive. If the candidate successfully completes the case study, the feedback

provided is usually short sentences such as "it is well done, it is okay, you've passed this step".

**Talk with the CEO/CTO**: Since this step is not considered necessary every time, some employees do not get to meet the CEO or CTO. Although no complaints have been received on this issue, this situation may be perceived as an inequality among employees.

**Turnover**: One of the problems voiced in satisfaction interviews throughout 2019 is high employee turnover. Employees said that while a newcomer has just adapted to the team, the newcomer or someone else leaves after a short time and that the constant change of the team disrupts the order and complicates the work. Although it was mentioned in both employee satisfaction interviews held in 2019, it was not measured until the second quarter of 2020 and no specific action was taken on the subject. The turnover, which was 8% in the second quarter of 2020, was measured as 3% in the third quarter and 4% in the fourth quarter. Turnover is calculated through following formula:

(Number of people left the company / Average number of employees per quarter) x 100

Although these measurements show a reduction in turnover, it is not known whether it was a coincidence or a success. This metric should be followed closely for the success of the company and the employer brand.

### 10.2.2.2 Onboarding

As in the hiring process, there is a lack of automation in the onboarding process as well. To send the onboarding feedback questionnaires sent at the end of the second week and the third month, the HR team has to put a reminder on their calendar of who and when to send these questionnaires. Subsequently, the responses have to be analyzed manually one by one.

**Company Onboarding**: The biggest complaint of the employees about the onboarding process is that the plan is too long, complex, heavy, inefficient, and time consuming. The general opinion amongst employees is that the onboarding plan can be better structured. The suggestions of employees include that tasks should be of a decent length, duration of completing each task can be stated on the onboarding plan and learning by experience would be more effective than constantly reading or being explained.

Another problematic aspect of the current onboarding plan is the definition of done. As can be seen in the onboarding plan exemplified in Appendix P I, tasks are written in very short sentences. For instance, the plan says that the newcomer should meet Martin, Joe, Jennifer,

and Sarah. However, there are no clues or directives as to when they should meet these people, which channel they should communicate through, whether the meetings should be formal or informal, and what subjects they should talk about. Likewise, it is written that the newcomer should get familiar with platforms such as Slack, Notion, and Uptime. However, it is not specified whether to take action. Therefore, candidates are confused as to whether they need to do any installation and create an account, or just learn how to use the platform.

Another problem faced during the onboarding period is document access. Due to the nature of systems and tools used within the company, for a person to view a document, the owner or one of the editors of the document must give the person access. The necessity of providing system and document accesses one by one creates a burden for both newcomers and other employees. Sometimes it takes months to give all the access to the newcomer, and the biggest problem is experienced when a newcomer needs a document but cannot access it immediately due to asynchronous communication. In such a case, there is no possibility to reach the owner of the document via another channel and inform them about the urgency of the situation. Because as can be seen in figure 7, the document owners are not visible on the access request screen. If a person requests access, all editors are automatically sent an email about the person asking for access.
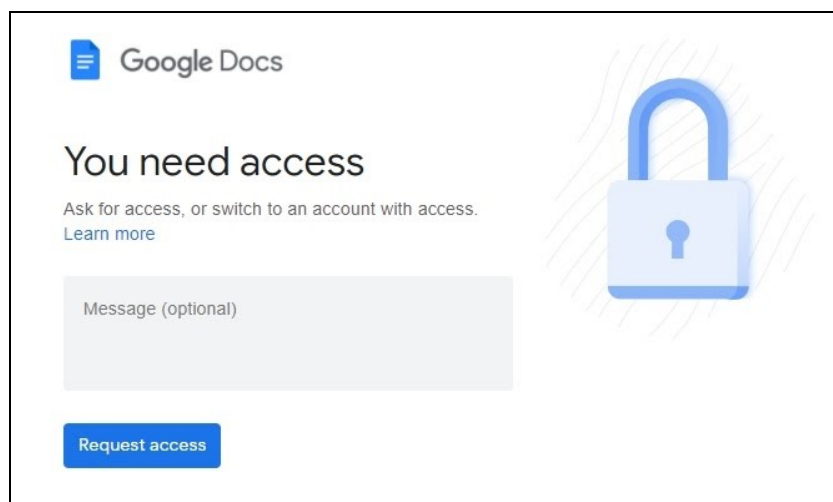


Figure 7 Access request screen in Google tools, (own processing through Google, 2021)

**Team Onboarding**: In this step, all team leaders are supposed to meet the newcomer to introduce their teams, responsibilities, and activities. The problem is that there is no specific structure for these meetings. According to the feedback gathered from the newcomer meetings, some team leaders give presentations, while some do not. Not every newcomer is

provided with the same information. Besides, team leaders usually schedule 20-30 minutes of meetings, however, newcomers do not find it sufficient.

During the onboarding with the newcomer's own team, the team leader should define activities and goals for the newcomer after giving the necessary information about the team. Since the HR team does not monitor these steps and does not give team leaders a specific structure, team leaders have no idea how to fulfill this properly.

### 10.2.2.3 Learning and Development

As stated in chapter 9.4, the company currently does not have a learning and development process. This situation appears to be the biggest problem regarding HR functions which is constantly expressed by employees. Employees have raised this issue in every satisfaction interview, NPS survey, and other feedback processes conducted since the beginning of 2019, the date when satisfaction data began to be collected. Employees state that they feel the deficiency of an individual approach with a specific development plan, guidelines, proactive coaching from the HR team, and internal hiring opportunities. Employees know that the company supports them in any way for their development. However, they want the HR team to own this process, and help them with career development.

The lack of this function also leads to other problems that employees are not aware of. For instance, the company lacks senior people within the teams, however, employees are not aware of what level of career ladder they are at, they do not know what are all the responsibilities and competencies they need to perform in their role, and some of them consider themselves as a senior, which they are not. These problems have already been analyzed by the HR team and addressed in chapter 9.4. Aware of these problems, the HR team started initiatives to plan systematic learning. In fact, learning and development is the process that has been identified in HR team strategy as the biggest part of the places where to play to achieve the winning aspiration. Therefore, it is asserted as the most important topic for the HR team.

The team wants to set a standard and non-managerial leadership by creating a very clear, transparent career path and growth opportunities for employees. This means clear steps should be defined in advance for every particular position or team. All the rules and steps in the career path must be very clear in order that there should not be any need for a manager or colleague to evaluate each step of an employee. For instance, if an employee wants a promotion, wants to become a senior, wants a salary increase, or wants to move to a different

role, all they need to do should be to follow the clearly set guidelines for their position or team, and fulfill those steps without needing any help. Once they complete the steps, they should be eligible for what they want to achieve without anyone else getting involved.

The HR team conducted a survey to learn about the expectations of employees from the HR team in May 2021. Employees stated they appreciate the fact that the team is working on developing the L&D process. However, they think the HR team is suffering from a lack of vision about employee growth. They stated that the HR team's plans seem to lack understanding of individual needs and goals, and proper, visible motivation. Indeed, these concerns of employees are not unfounded. The focus of the L&D process that the HR team is currently planning is not the career development of the employees, but the competencies that the company needs. Although the competency model, which is the first step that the HR team has taken, evaluates the skills of individuals, its purpose is to contribute to the competitive advantage of a company by revealing the competencies the company has within, not to contribute to people's development needs. In addition, the HR team did not plan a project to develop this process, and the process is being developed spontaneously. The team is currently busy completing the competence model companywide, but it is unclear what the next step will be and how it will be accomplished. For instance, all the materials regarding the competence model and career path are documented on Notion, and employees are provided with several learning materials to gain hard skills in cloud computing. This approach where learning needs are described step-by-step and documented accessible to everyone is nice, however, it does not bring any value. It is not different from reading books, employees cannot have an overview of their progress, measure it, or they do not have any guidance on where to aim. As the HR team does not have a plan, they have not evaluated the options regarding platform choice. They do not know if they will stick to Notion or buy an off-shelf Learning Management System (LMS) solution or use another option. Furthermore, they do not know how to make the process fun and easy and motivate the employees to learn more. They have no idea how to make it easy to track employee's progress to see how they are evolving or developing themselves. Another unclear and unplanned step is how to prepare the training materials or where to get them. During one of the newcomer meetings, one of the employees suggested that instead of getting learning materials from third parties, it would be more sincere and beneficial to prepare the learning materials by the employees in the company. The employee stated that this approach was used in the company he worked for before and it worked very well. However, the HR Manager expressed doubts about using

this approach as employees are already overloaded with their work, and the process of planning such an approach can be complete chaos for them. Nevertheless, Laszlo Bock (2015), the former Senior Vice President of People Operations of Google, talks about how Google employees train each other collectively under the program called "Googler2Googler". He calculates the return on investment (ROI) with a simple scenario: imagine the best salesperson brings $1 million in sales each year, while the other 10 salespeople in the team bring $500,000 each, which means the company has revenues of $6 million. But if the best salesperson is pulled out of the field for 10 percent of their time to educate their colleagues, they will bring only $900,000, however if these educations work out well, they can increase their colleagues' skills by 10 percent, it means that other 10 salesperson will bring $550,000 each and the company revenue will be $6.4 million. If the best salesperson stops teaching in the second year and only focuses on sales, it means the company revenue will be $6.5 million. However, if they keep educating their colleagues and those colleagues increase their sales by 10 percent each again, the company revenues will be $6.95 million, which means sales are up 16 percent for the company in two years. (Bhatt, 2019). This approach does not only help the development of other employees but also improves the listening and empathy skills of the teachers and provides benefits in terms of self-awareness. But in this case, employees who will be training others should be trained on how to do this and provided with clear guidelines.

Examples related to the details that need to be planned in the development process of this process can be reproduced. Consequently, the development of the learning and development process is a detailed, complex, costly, time-consuming process. If it is not well planned, resources can be wasted, and the process may fail. The HR team should make a project plan before taking any further steps after the competency model is complete. Otherwise, as employees have pointed out, "all the effort is pointless."

### 10.2.2.4 Employee Satisfaction

It is an indisputable fact that traditional employee satisfaction measurement methods are insufficient in today's world. Technology is developing faster than ever, and it brings many positive and negative changes to our lives. With the effect of the point that technology has reached in our lives, human's attention span and level of tolerance have decreased. People are constantly in search of doing things in an easier way. This also resulted in the traditional employee satisfaction measurement methods losing their effectiveness. This situation can be clearly observed in XYZ as well. As participation in NPS is not mandatory, employees do

not want to answer the survey every month. Therefore, the number of participants is not the same each month, which causes the results to be inconsistent (Figure 8). For this reason, although the open-ended NPS questions provide some insight for the HR team, the NPS method, which has a rating in its essence, does not actually provide consistent and reliable results. Aware of this, the HR team decided to change it to do it every three months in the first quarter of 2021. Thus, it is thought that participation in the survey will increase.
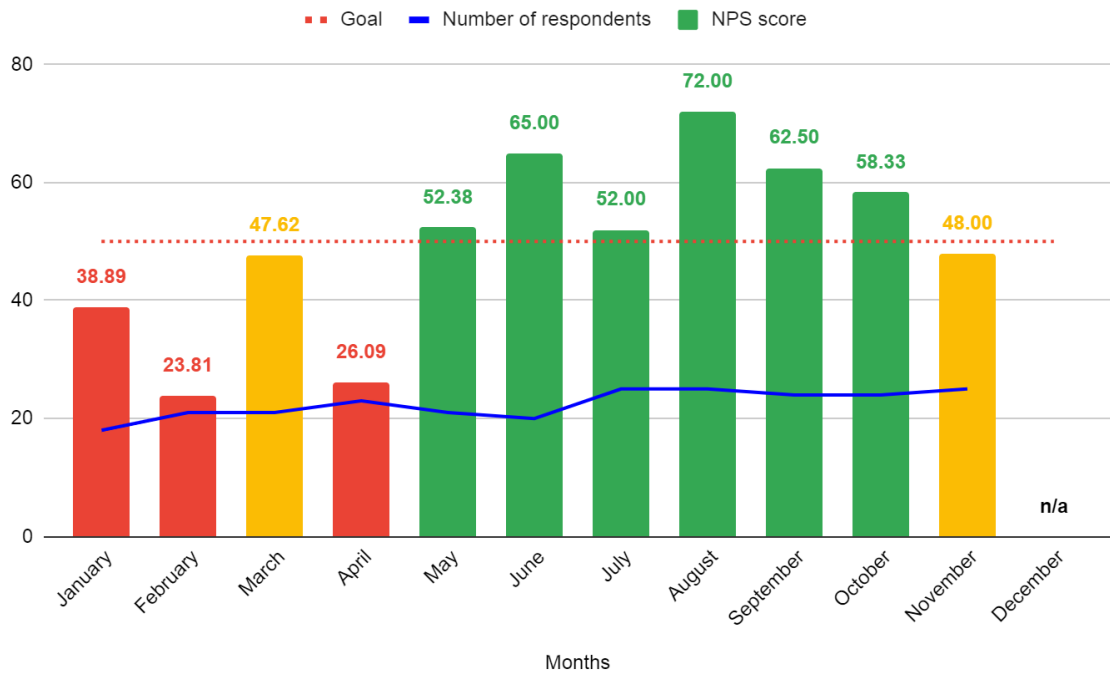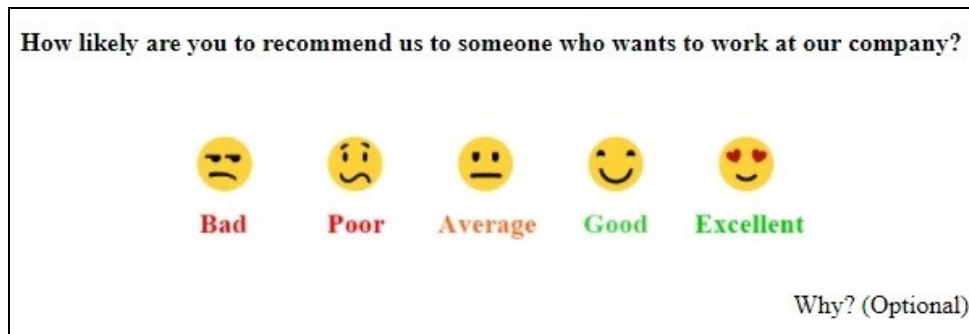


Figure 8 NPS scores in 2020 for the question "How likely are you to recommend us to someone who wants to work at our company" (own processing)

On the other hand, employee satisfaction interviews are held twice a year. While everything around us changes rapidly, our needs, feelings, and desires change at the same speed. Amid such rapid changes, it is insufficient and ineffective to hold satisfaction interviews twice a year. The most evident example of this is that the action plan put into practice for the communication problems mentioned in chapter 10.2.1 did not work, however, the result cannot be measured until June with the current process. For the same reason, the decision to conduct the NPS survey every three months is not the right decision.

The way to make employee satisfaction measurement effective and not boring is not to hold them less frequently. The solution is to use data, metrics, and artificial intelligence to measure and improve employee satisfaction, and to use continuous and proactive measurement methods. For instance, NPS questions can be sent in the form of short pulse

surveys with pop-up notifications in HRMS. Employees can choose from five emojis or stars that best demonstrates how much they agree with the question (Marr, 2018). Of these emojis, bad, weak, and neutral correspond to detractors on the NPS scale, good corresponds to passive, and excellent to promoters (Figure 9). Further open-ended questions can be offered optionally. Such a method will not only provide continuous and rapid feedback but will also enable to monitor to what extent the changes made, and the actions taken have improved employee satisfaction. Moreover, using natural language processing and sentiment analysis to analyze the answers to open-ended questions will help to better understand employees and gain better insight. Because NPS scores itself are just a number and do not provide any insight.



Figure 9 Exemplary short pulse NPS survey question (own processing)

Of course, this does not mean that satisfaction interviews should be completely abolished. The aim is to achieve maximum efficiency by combining human intelligence with the capability of machines.

### 10.2.2.5 Employer Branding and Social Media Presence

Although the company draws a strong and attractive employer picture on platforms such as Cocuma, StartupJobs and on its website, unfortunately, it projects a completely insufficient image on social networks. This is confirmed by the feedback collected in the newcomer meetings. One of the new employees stated that "The company gives the impression of a very strong and great company from the outside, but there was negative reality upon arrival".

The marketing department uses social media to publicize the company's name and events, however considering the current audience, it is seen that only the people who know and are related to the company follow them. This means the current social media presence is not different from the company not being on social media. While this social media strategy

cannot even promote the brand, it cannot be expected to improve the employer brand and attract future employees.

Social media is a gem that should be integrated into human resource activities. It is cheap – even free, it presents wide and deep statistics about the user base, page, and advertisements. It has a large user base that no advertisement can attract to the company's website (Facebook has 2.797 billion, Pinterest has 459 million, TikTok has 732 million monthly active users. YouTube's potential advertising reach is 2.291 billion, while Instagram's is 1.287 billion, and Twitter's is roughly 396 million. (We Are Social and Hootsuite, 2021)). Therefore, HR needs to leverage social media.

In addition to taking an active role in social media, determining the right strategy is also important for success. First, the company's social media accounts have to be updated as they contain only basic information currently. There is a lot of room to improve the profiles. Second, as each social network appeals to a different user base, it is a big mistake to share the same content on all platforms. Shares should be made as per the target audience, and posts need to be "relevant, interesting, appealing, timely, engaging" to be read and shared (Headworth, 2015). Third, being in social networks where potential employees socialize is critical to any social media success, as in the case of Marriott Hotel. XYZ's potential employees for marketing and sales socialize on LinkedIn, Twitter, and Instagram, while potential employees for IT are often active on GitHub, GitLab, and Twitter. The company should concentrate its focus on these networks. Last but not least, the company should also have a social presence on GlassDoor, which is one of the social networks that are most commonly associated with recruiting and has become an important resource especially for job seekers and employer branding.

### 10.2.3 Exploration

The exploration stage is a part of the system development process, where additional data is gathered on top of the analysis of existing systems and processes. Multiple techniques can be used to collect data including interviews, questionnaires, observation, and focus groups. (Kavanagh and Johnson eds., 2018)

In the previous chapter, data obtained from recruitment, onboarding feedback, monthly NPS surveys, employee satisfaction interviews and exit interviews were used while analyzing the current situation. Moreover, an annual survey has started to be sent to find out the expectations of employees from the HR team. In other words, surveys and interviews are

being conducted continuously. As employees are already overloaded with work, sending more surveys can be frustrating, or might lead to discontent. Instead, the expectations of the employees from the system can be handled within the scope of change management. At the beginning of the development process, as the first step of change management, employees should be informed that the HR team has started to develop a management system and what the system will encompass. Subsequently, they should be asked about their expectations from the system. This meeting can be held during the TGIF, which is an all-hands meeting held every Friday where information and updates in the teams are shared. This will be less time-consuming for everyone, and it can be more beneficial than a one-on-one meeting as one word leads to another and employees can ask further questions.

### 10.2.4 Needs, Goals and Objectives

Since the analysis of the current situation is in place, now the needs, goals, and objectives of the project can be determined. Common goals of HRMS development are automation, cost reduction, speed in delivery of services, and improving efficiency. Although XYZ shares the same goals, the objectives must be determined precisely for the project to be successful and be aligned with the HR team strategy given in chapter 8.5.1.

Before moving on to goals and objectives, it is favorable to take a look at the needs analyzed throughout chapter 10.2. To see the picture as a whole, all needs analyzed are brought together:

- Communication should be transparent and open, consistent processes for communication should be ensured, communication between the top management and employees should be improved, English language support should be provided.

- Problems should be taken care of without postponing.

- Benefits should be improved according to the remote-first approach.

- Well-being policies should be developed. Guidance for work-life balance should be provided.

- Engagement activities should be carried out more frequently.

- Better hiring experience should be offered. Candidates should be given more detailed information about the company. Detailed feedback should be provided to candidates. CEO/CTO meetings should be held with each candidate to enable them to build a relationship. Social media should be leveraged for employer branding and hiring.

- Better onboarding experience should be provided. Onboarding plans should be restructured with clear directives, and the definition of done should be specified. Team leaders should be provided a guideline, so that they can offer better team onboarding. Candidates should be given an opportunity to adapt to the company by practice, rather than just reading and listening about it.

- A systematic learning and development process should be established. L&D should be owned by the HR team instead of funding. Employees should be provided with an individualized, specific development plan. The path to seniority should be clearly defined so that employees can manage their own development without the need for anyone's guidance. Training should be supported with effective methods such as gamification.

- Employee satisfaction should be measured in a more agile and timely manner.

- Efficiency of HR processes should be increased. The HR team should be relieved from routine, repetitive, time-consuming, non-value-added jobs. All transactional HR activities should be automated. Portals used for hiring should be reconsidered. Reporting, analytics, data usage should be leveraged. The HR team should be able to measure consequences of its activities.

- Cost reduction should be achieved by reducing the number of software used, reallocating the budget for hiring, and automating transactional activities.

As may be expected, HRMS cannot solve all problems and fulfill all the needs. Since the success of the project is directly related to the clear determination of the goals and objectives, the problems that HRMS can solve have been determined as goals of the project.

**Goals**: Improving hiring process. Providing a better onboarding experience. Offering systematic learning and development opportunities. Measuring employee satisfaction in a more agile, efficient, and timely manner. Increasing efficiency of HR processes. Reducing costs. Capitalizing HR trends.

**Objectives**: Objectives have been determined within the SMART framework for the goals.

**SPECIFIC** – Specific objectives to achieve desired goals:

- Enabling synonyms to be used in applicant filtering. Providing applicants feedback with artificial intelligence during hiring. Reducing time to fill to 50 days and time to hire to 20 days, considering current times to hire and fill as well as the average time

in Europe and world. Using data instead of intuition. Starting to watch valuable metrics automatically: time to fill, time to hire, source of hire, efficiency of sources, employee turnover.

- Relieve the tediousness of onboarding by including gamification (need to cooperate with third parties to determine more specifically how to leverage it). Receiving no complaints about the onboarding process.

- Offering personalized learning by analysis and assessment of achievements with artificial intelligence. Measuring how employees are progressing and analyzing their learning behavior. Supporting the learning with effective methods, e.g. gamification.

- Increasing monthly participation in NPS surveys to 50+ people and the NPS score to 85% by turning NPS surveys into short pulse surveys to measure satisfaction.

- Cutting PandaDoc off and including e-signing in HRMS.

**MEASURABLE** – To measure outcomes and see if goals and objectives have been achieved, the following questions can be considered:

1. Does HRMS make faster and better decisions about applicant screening?

2. Are all candidates given detailed feedback on their application, regardless of whether they are hired or not?

3. Did HRMS reduce time to fill and time to hire?

4. Does HRMS provide insights into the organization's hiring, onboarding, and learning and development needs?

5. Are the determined metrics monitored regularly and automatically?

6. Is gamification integrated into onboarding?

7. Are there any complaints about the onboarding plan?

8. Does each employee have a personalized learning plan?

9. Are employees taking up opportunities for learning and are they then participating in courses all the way through or are they ignoring various aspects?)(measurement of engagement with content) (Marr, 2018)

10. Are employees struggling with various aspects of the learning content? (measurement of employee comprehension) (Marr, 2018)

11. Has HRMS consistently increased participation in NPS to 50+ people and employee satisfaction to 85%?

12. Did PandaDoc cut out and its functionality is included in HRMS?

**ACHIEVABLE –** As stated in HR team strategy the company has capability to develop, execute and communicate bold concepts, which are innovative and rare. The company has necessary skills to set up an in-house automation system. It has resources to use third-party applications, if necessary. The problems experienced are not problems that have not been seen before or experienced by others. Specific objectives have been set considering the current state of processes and benchmarks and are reasonable. With the right project team and implementation, all these set goals and objectives can be achieved.

**RELEVANT –** Goals and objectives have been determined based on the needs analysis and aligned with the HR team strategy.

**TIMELY –** While some objectives will be realized as soon as the system is implemented, some goals will take time to achieve and measure. Using synonyms for filtering, providing candidates feedback, relieving tediousness of onboarding, and cutting PandaDoc off are the objectives that can be immediately achieved after implementation. For goals that will take time, it is good practice to set milestones. Following milestones have been determined based on experience.

- Objectives regarding reducing time to hire and time to fill can be achieved one and a half year after implementation if the other related needs are met at the same time.

- Data to watch valuable metrics will begin to be collected upon implementation, however, gaining reliable insights will be possible one year after implementation.

- To see if there will be complaints about the onboarding plan and if these results are consistent, first a sufficient number of hiring must be made. This will only be possible after at least one year after implementation.

- Measuring how employees are progressing and analyzing their learning behavior, which will help to form the basis of personalized learning, will start upon implementation. The collection of data sufficient to personalize the courses and training will vary depending on the rate of participation of the individuals in them. In case of regular use, it can be personalized within a month and a half. In case of

non-regular use, proper personalization can take months, which is not possible to predict.

- Monthly participation in the NPS surveys to 50+ people can be achieved within two months after implementation. On the other hand, as employee satisfaction is related to overall experience, NPS score is directly proportional to improvements of other HR functions. Therefore, even though the NPS score will progressively increase, reaching 85% and ensuring consistency is possible after at least a year.

### 10.2.5 Priorities

'As no organization has an unlimited budget to implement all functionality desired by the organization, prioritizing ensures that the most important functionality will be given first focus' (Kavanagh and Johnson eds., 2018). Using the defined goals and objectives, now the priorities of the project can be determined. While ranking the needs, most complained and sought processes, processes that do not exist, processes to be improved, cost, time to implement, and what will bring the most value to end-users and the organization have been taken into consideration.

According to employee feedback, most complained and sought processes are learning and development. These processes have been on the agenda of employees for a very long time and are constantly requested from the HR team. Learning and development does not exist at all, while onboarding needs to be improved. Other processes that need to be improved are hiring and onboarding. If these needs are ranked according to their cost, they can be ranked from the costliest to the least costly such as: learning and development, hiring, onboarding, and employee satisfaction. When making this ranking, the technologies to be used, the complexity of developing these technologies, the complexity of the process, the required workforce, and, if necessary, third party services are taken into account. Likewise, considering the complexity of technologies to be used and complexity of the process itself, these needs are ranked from the most time-consuming to the least time-consuming as: learning and development, onboarding, hiring, employee satisfaction. While learning and development enables employees to improve themselves and rise in their careers, it will also bring value to the company. Learning and development starts with onboarding. As these processes are win-win for both parties, they are the processes that will bring the most value to employees and the organization.

In the light of this assessment, the importance level of priorities is given in the table below.

Table 4 Importance level of priorities
(own processing; framework: (Kavanagh and Johnson eds., 2018)

| Priority | Importance | Description |
|---|---|---|
| Learning and Development | Mandatory | Must be present at implementation |
| Onboarding | Mandatory | Must be present at implementation |
| Hiring | Mandatory | Must be present within six months of implementation |
| Employee Satisfaction | Strongly desired | Nice to have, must be present when resources allow |

### 10.2.6 Tools and Techniques to Be Used

The company's current documentation tool is Notion, and it is acknowledged in the company that if something is not in Notion, it does not exist.

As mentioned in chapter 9.1.4, Notion is an effective documentation tool which offers everything altogether. Besides it helps to keep notes and materials organized, it allows users to create dashboards where tasks and deadlines can be assigned to specific people, which facilitates tracking the projects. Notifications and emails are sent to the relevant users when changes are made on the pages or when a task is assigned to a person. It is easy to manage, and it is transparent. Commenting and mentioning options provide flexibility to users, thus they can work asynchronously. Additionally, external users can access the pages if access is granted, which means that the tool can also be used in case of collaboration with a third party. For all these reasons, it would be appropriate to use Notion as a project management tool.

## 10.3 Design

In this chapter, the design of the system is developed over the components mentioned in chapter 5.3. In the first sub-chapter, it is explained how the logical design should be developed. In the second sub-chapter, major activities of physical design such as the decision whether to continue system design and software needs are discussed. Furthermore, one of the research questions, "Would adding features and extensions help to solve the problems?" has been answered.

### 10.3.1 Logical Design

A design problem is a fundamental part of software design, which clearly defines the system requirements and helps the technical personnel to better understand the business processes and needs. Software developers choose valuable information amongst the problem and draw up a diagram and translate this problem into a fully functioning system afterward. (Tech with Tim, 2020, sec: 00:59) Since logical design is inherently a summary of existing processes and needs, it is not included in the study to avoid the repetition of chapters 9 and 10.

### 10.3.2 Physical Design

The first step of the physical design is to determine how to proceed with physical design. As of April 2020, there are no organizational or environmental reasons to prevent the company from proceeding with the system design. Hence, it should be decided whether to upgrade the current system or purchase a new system. As revealed in the needs analysis, current HR processes should be reengineered regardless of the technology used or to be implemented. On the other hand, the reengineering of the current processes is beyond the scope of this project. However, as the goals and objectives for desired outcome are determined, they will be considered for evaluations of the solution options.

#### 10.3.2.1 Comparison of Possible Solutions

The company has four options for obtaining HRMS: building from scratch in-house, building in-house with low-code, buying off-shelf solutions, and outsourcing the development. These options are compared in table 5. The comparison was made by considering XYZ's number of employees (73), identified needs in chapter 10.2.4, and capabilities. This table does not apply to other companies as these factors vary from company to company.

Table 5 Comparison of possible solutions (own processing)

|  | In-house from scratch | In-house with low code | Off-Shelf | Outsourcing the development |
|---|---|---|---|---|
| **Complexity** | High | Medium | Low | High |
| **Duration** | 1-5 years | Up to 1 year | 6-8 weeks | 1-3 years |
| **Cost/Pricing during implementation** | Over $130,000 (total) | Without integrations: Up to €1,200/annually | Up to €50,000/annually | Over $180,000 (total) |

| | | With integrations: No limit | | |
|---|---|---|---|---|
| **Cost/Pricing during maintenance** | Low | Low (Unless the third-party integration) | Usually included in price | Moderate |
| **Percentage of needs met** | Up to 100% | Up to 90% | Up to 55% | Up to 100% |
| **Integration with other software** | Possible | Possible | Usually possible | Possible |
| **Customer Support** | – | Some may incur additional charges | Some may incur additional charges | Available |

As discussed in the literature review, today, software development is an expensive, time-consuming and inefficient option. As can be seen in table 5, regardless of outsourced or built in-house, software development from scratch is high in complexity and can take up to five years to implement. The only advantage of developing a software from scratch is that it can meet 100% of the needs and the maintenance costs are low. Therefore, it would be more reasonable for XYZ to consider other options first.

Off-shelf options, on the other hand, are the most costly solution after developing software from scratch. The biggest drawback of off-shelf solutions is that there is no all-in-one solution in the market. Off-shelf solutions offer different modules together. Thus, companies only pay for modules that meet their needs. For this reason, 33[1] of the off-shelf solutions available in the market were compared and it was investigated to what extent they met the needs of XYZ. As a result of this investigation, unless more than one solution is purchased, XYZ's needs can be met only up to 55%. Here, it is also worth to mention that only one or two of these software include AI, however none of them includes gamification. This has been taken into account when calculating the percentage. Pricing was also examined during the investigation. Pricing of solutions in the market is generally per user per month. The base price per user per month ranges from $7 to $40, while adding different modules costs between $2 and $8 per module. Considering the modules XYZ has to purchase, the average

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[1] ADP WorkforceNow, BambooHR, BizMerlinHR, ClearCompany, Cornerstone, Dayforce, GoCo, Grove HR, Gusto HR, HR Cloud, HR Partner, iCIMS Talent Acquisition, Idenfit, Leapsome, monday.com, Oracle HCM Cloud, OrangeHRM, PeopleGoal, PeopleGuru HCM, People Strategy, Personio, Rippling, Sage HRMS, SAP Success Factors, SentricHR, SkillsBoard, SutiHR, UKG, Workable, Workday HCM, ZenHR, Zenefits, Zoho People.

annual price is calculated as $30,000 for 73 emloyees. If XYZ wants to obtain the software through an off-shelf solution, it has to purchase multiple software to meet 100% of its needs.

As the last option, low code seems to be a promising solution for all criteria given in the table 5. Since the company's current HRMS is developed on a low-code platform, Whether it can meet the company's needs if different features and extensions are added is discussed in the next section.

### 10.3.2.2 Evaluation of Features and Extensions of the Current System

The reason XYZ company uses AppSheet because each company has different needs. XYZ considers AppSheet as a great solution to meet front-end users' needs considering the complexity, time consumption, price, and resources. The platform offers huge flexibility, quick development deployment of new features typically in matters of days or hours for its users. Internal Processes Developer of XYZ reported that it took 5 man-days to create the current HR application, as he is experienced in using low-code platforms.

In XYZ's case, system development phases which are described in chapter five are managed by Internal Processes Developer. However, application development starts directly from the design phase, skipping the planning and analysis phases. XYZ's AppSheet application's database is located in Google sheets. This means that the only requirement for creating a feature or application is to define data structure in Google Sheets and import it to AppSheet. Afterwards, custom actions and automation steps are set, and the user interface is customized. After testing, the application is deployed.

Although it provides great advantages in terms of time, cost and resources, AppSheet also has some disadvantages. Possibilities with low-code platforms are limited. These platforms offer certain options and features. Since the platform is constantly being developed, changes come as a fact. Users have to accept this fact before using any platform that they do not own. While some new features are added, some of them might be changed or removed. Users have to change their behavior accordingly. Besides, these platforms limit the users regarding the user interface. There are several preset buttons, user interface (UI) and user experience (UX). Users are limited to what the platform offers. These aspects distinguish low-code platforms from hardcore development. As the features offered by AppSheet are already given in chapter 9.1.1, the features and extensions can be evaluated as to whether it will meet the needs.

Table 6 Comparison of needs and possibilities of current system (own processing)

| Function | Needs | AppSheet Evaluation |
|---|---|---|
| **Hiring** | Applicant screening using synonyms via AI | Can be integrated with API |
| | Providing feedback to candidates with AI | Not possible to integrate AI needed |
| | Monitoring hiring metrics automatically | Can be easily automated inside the database |
| **Onboarding** | Relieve the tediousness of onboarding plan with gamification | Can be integrated with API |
| **Learning and Development** | Measuring progress of employees | Can be integrated with API |
| | Analyzing employees' learning behavior | Can be integrated with API |
| | Gamification experience | Can be integrated with API |
| **Employee Satisfaction** | Short pulse surveys | Can be sent to users as notifications |
| | Sentiment analysis | The platform offers sentiment analysis |
| **Document Approval** | E-signing | The platform offers approval and signature feature |

The current HRMS created on AppSheet assists the HR team to a limited extent and undoubtedly does not meet the needs. As can be seen in table 6, by adding features and extensions offered by AppSheet, it is possible to automatically monitor hiring metrics, turn the NPS survey into short pulse surveys and perform sentiment analysis on responses, and e-sign documents. However, it is not possible to perform any other AI activities than sentiment analysis, and the platform is not conducive to gamification development. Therefore, AppSheet alone is not sufficient to meet the needs of the company, as it will not help to achieve the goals and objectives set as priorities in chapter 10.2.5.

On the other hand, AppSheet offers integration options that provide high flexibility in application development. One of these integrations is the Application Programming Interface (API). API is the interface that enables the functions of an application to be accessed and used externally or remotely. The main purpose of using API is to make all or

some methods of an application available to other applications and meet remote data and information requests easily and quickly (Esen, 2018). Artificial intelligence and gamification features that AppSheet does not have can be added from other applications via the API. With the increasing use of low-code and no-code platforms, many vendors have added API integration to their solutions. Therefore, there are many solutions on the market that can meet XYZ's artificial intelligence and gamification needs with API integration.

## 11 COST, TIME AND RISK ANALYSIS

When developing a project, a clear roadmap should be set to make effective decisions. Time, risk, and cost analysis are the sine qua non of this roadmap. These analyzes may influence the decision to implement the project. Therefore, in this chapter, the costs and risks that may arise in case the company's current HRMS is expanded with features and extensions are analyzed and a timeline is prepared.

## 11.1 Cost Analysis

As its name speaks for itself, a cost-benefit analysis is an analysis that shows the benefits and financial gains to be obtained against the costs of a project to be realized. Since the cost analysis will be influential in the decision whether to implement the project, it must be present in the business case. A business case would not be complete without a comprehensive cost analysis.

The purpose of cost-benefits analysis is not to justify the proposed solution. Any analysis made for this purpose will lead to the failure of the project. Therefore, to conduct an objective analysis, it is more appropriate to start with determining the benefits first. Otherwise, knowing the costs can cause biases and easily lead to an inaccurate analysis. The benefits of this project will be as follows:

- The main cost-reduction benefit will be the time saved by automation of transactional activities. For instance, the process of transferring applicant information from job portals to AppSheet, which takes approximately half an hour to an hour of the HR Manager for each application, will be automated. Another instance is that, manual preparation of the hiring metrics sampled for this study takes approximately three workdays (Chapter 10.2.2.1, time-to fill, time to hire, source of hire). Automatic and regular reporting of these metrics means that the HR team can save three days and allocate them to other tasks.

- The onboarding process will be saved from being cumbersome and boring, and will become more engaging. Therefore, employee turnover will be decreased. Consequently, recruitment and onboarding related costs will be reduced.

- The learning and development process, which is the HR function that employees most lack, will be set. In addition, the company will have the opportunity to offer additional value with personalized training to its employees.

- Since employee satisfaction can be measured in real-time, its efficiency will increase. Action plans for problems and requests can be created and implemented quicker.

- Decisions will be backed by data, and will not be based on intuition.

- Along with these, the employer brand will be strengthened as the company will have adopted innovative technologies.

- PandaDoc's vendor contract will be canceled as it will lose its functionality.

Before estimating costs, it should be noted that due to various limitations, it is not possible to make a clear numerical cost analysis of the project. One of these limitation is that since it has not been determined from which application the API will be integrated, expenses such as subscription plan, licensing, features which are not included in the base price, extra fees for customer support and maintenance cannot be given clearly. Another limitation is that as the HR team members are not responsible for only one function (e.g. HR Manager is not only responsible for recruitment, but also for HR strategy and design, employee experience, learning and development, culture cultivation), it is not possible to determine the cost savings required for return on invesment (ROI). A third limitation is labor costs for the Internal Processes Developer, which cannot be shared due to the non-disclosure agreement. It is important to represent all (or nearly all) sources of cost, where the costs cannot be clearly determined. In this analysis, average costs will be shared where possible, and in cases where it is not possible to determine a cost, the cost source will be specified.

It is favorable to begin the cost estimation with pricing plans of the currently used tools. The biggest advantage of Appsheet is that it is free to XYZ as it is a Google partner. PandaDoc, on the other hand, costs $ 1068 annually, plus $2000 is paid for its API integration.

The major costs of expanding AppSheet are API integrations and the salaries of employees in the implementation team. As mentioned, salaries of the employees cannot be shared in this study. However, it is possible to estimate the costs of services to be purchased and API integrations. Annual subscription plans for gamification cost $3300 on average, while it is $1610 on average for AI powered talent management tools. Extra fees between $200 and $2000 apply to API in both cases. Thus, the gamification and AI services with API integrations will cost 8000$ on average in total. Not to be overly optimistic but this number is many times lower than the solutions compared in table 5.

As the majority of the implementation process will be carried out by the implementation team which consist of company employees (i.e. Internal Processes Developer and Data Security Engineer), vendors will be involved in the project only to some extent. Since an implementation team will not be involved in the project by the vendor, this will significantly reduce implementation costs. Costs related to vendors might include training services, consulting, and installation support.

Additionally, there will be a loss of efficiency during the project development due to the time that employees in the steering committee and the implementation team will allocate to the project. This will emerge as an indirect cost.

## 11.2 Time Analysis

To make a project practicable, the tasks and actions to be performed should be broken down into parts. Afterward, these activities are listed and their estimated duration are determined. Duration is the time interval required to complete a job. It is estimated based on experience, reference or external expert opinion. Actions and estimated duration for this project are given in table 7.

Table 7 Activities and estimated duration of the project (own processing)

| Activities | Estimated Duration |
|---|---|
| 1. Review this study | 9 weeks |
| 1.1 Evaluation of goals, objectives, and project scope | 1 week |
| 1.2 Identifying new needs and problems, if any | 2 weeks |
| 1.3 Building teams and determining responsibilities | 2 weeks |
| 1.4 Setting the budget | 6 weeks |
| 2. Logical design | 35 weeks |
| 2.1 Process mapping | 8 weeks |
| 2.2 Reengineering of existing processes | 35 weeks |
| 2.2.1 Recreation of onboarding plan | 4 weeks |
| 2.2.2 Completion of the competency matrix | 9 weeks |
| 2.2.3 One-on-one meetings with employees to learn about individual career goals | 8 weeks |

| | |
|---|---|
| 2.2.4 Preparation of learning materials | 22 weeks |
| 3. Physical design | 12 weeks |
| 3.1 Preparing the request for proposal | 3 weeks |
| 3.2 Assessing System Feasibility | 5 weeks |
| 3.3 Finding promising vendors and products | 3 weeks |
| 3.4 Shortlisting | 2 weeks |
| 3.5 Trying out demo versions | 6 weeks |
| 4. Change Management | 23 weeks |
| 5. Implementation | 10 weeks |
| 5.1 Developing the system | 6 weeks |
| 5.2 Data Migration | 3 weeks |
| 5.2 Software Testing | 4 weeks |
| 5.3 Documentation | 1 week |
| 5.4 System Conversion | 1 day |
| 6. Risk management | 16 weeks |
| 6.1 Reviewing the risks | 2 weeks |
| 6.2 Researching prevention methods | 6 weeks |
| 6.3 Implementing prevention methods | 8 weeks |
| 7. Project closure | 1 day |

There are various models and methods for time budgeting, and one of them is the Gantt chart. This bar chart provides an overview of the actions that need to be taken, the estimated duration, and when actions need to be taken. For budgeting the time for this project, a Gantt chart is used (Figure 10).
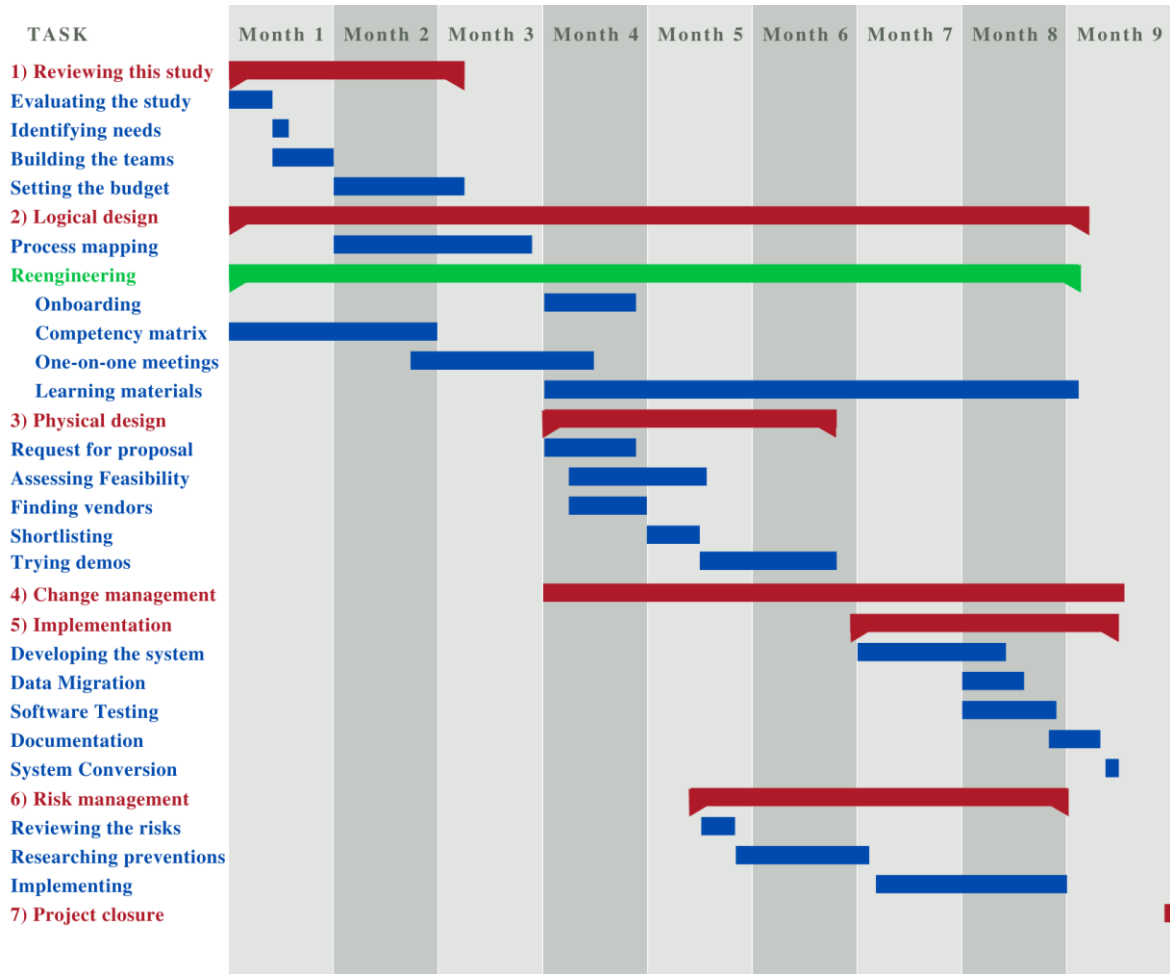
Figure 10 Gantt chart (own processing)

Although applications developed on low code platforms are implemented in a very short time, and the estimated duration for this project is calculated as 39 weeks. The most important factor in prolonging the project is the reengineering of the processes. Besides, the following factors were taken into account when estimating the duration:

- The HR team has limited time to devote to the project due to their responsibilities and tasks.

- Disruption of work in XYZ due to the rapid change of the agenda.

- The difficulties experienced in maintaining alignment, especially in teams with more than five people.

- Long negotiations due to the involvement of third parties in the project.

It is worth mentioning that duration can be significantly reduced if teams worked devoted enough.

## 11.3 Risk Analysis

Risks only have devastating effects on individuals or organizations when they are not prepared for them. Conducting a risk analysis by considering potential risks and their effects is the first step in being ready for risks. A risk management plan is created afterward to reduce or eliminate these effects on time.

As there is no plan or project that does not bear risks, this project is no exception. Although the system is currently in use, new features and extensions will introduce new risks. The risks associated with the project can be:

1. Risks associated with the project development life cycle:

   a. Skipping needs analysis: As this step is the most time consuming part of the project development life cycle, it is often skipped. XYZ was considering off-shelf solutions at the time of the collaboration agreement for this project but had not conducted a needs analysis. They may be inclined to skip this step again because they do not have enough time to devote to it.

      **Impacts**: The solution may not meet the company's needs and may be inefficient.

      **Mitigation**: This study provided all the necessary analysis for the realization of the project. However, it should be noted that the study was conducted in April 2021. The validity of the analysis should be checked before use. If any, emerging problems, and needs should be analyzed.

   b. Not considering enough vendors: Not considering enough vendors in the selection of vendors that will integrate artificial intelligence and gamification with the API to AppSheet.

      **Impacts**: The maximum and most effective results that could be achieved may not be achieved.

      **Mitigation**: This risk can be avoided by evaluating at least 10 vendors. A shortlist should be prepared by evaluating the features, price, and customer support offered by the evaluated vendors in their products. If available, demo versions should be tried before deciding.

c. Poor communication: The lack of clean and transparent communication between the project manager, steering committee, top management, employees, and vendors.

**Impacts**: It may cause errors that will directly affect the desired outcome. It may adversely affect change management. The project may be delayed, and costs may increase.

**Mitigation**: How and how often the communication will take place should be determined in advance. In any case, communication should be clear and transparent. Emerging problems should not be hidden from anyone. Determined tools and techniques should be adhered to.

d. Lack of top management support: Lack of support expected from top management.

**Impacts**: The project may be delayed, suspended, or canceled.

**Mitigation**: Top management should be on the steering committee. They should be reported regularly. The project should be justified with a detailed and carefully prepared business case.

e. Not working dedicated enough: XYZ may tend not to work dedicated enough on the project. There could be several different reasons for this. As the HR team is busy with transactional tasks, they may not devote the necessary time and attention to the project. Another reason is that it is not uncommon in XYZ that promises made are not kept and forgotten.

**Impacts**: Project delivery time may be delayed. Costs may increase.

**Mitigation**: Regardless of how busy they are, the HR team should stick to the project and move forward following the established timeline.

f. Lagging the planned timeline and exceeding the set budget.

**Impacts**: Project delivery time may be delayed. Costs may increase. Employees may be disappointed.

**Mitigation**: Communication should be clear and transparent at every stage of the project life cycle. The responsibilities and tasks of the people who will take part in the project should be determined precisely. In weekly

performance meetings, it should be checked whether the project is on track and whether the budget is exceeded. The project scope should not be changed during the design or implementation phase.

According to these evaluations, the risk score was obtained by multiplying the probability and impact scores of potential risk sources (Table 8).

Table 8 Score calculation of risks associated to project development life cycle (own processing)

| Risk no | Risk | Impact | Probability | Risk Score |
|---------|------|--------|-------------|------------|
| R1 | Skipping needs analysis | 3 | 1 | 3 |
| R2 | Not considering enough vendors | 3 | 0 | 0 |
| R3 | Poor communication | 4 | 1 | 4 |
| R4 | Lack of top management support | 5 | 1 | 5 |
| R5 | Not working dedicated enough | 4 | 2 | 8 |
| R6 | Lagging the planned timeline and exceeding the set budget | 4 | 2 | 8 |

2. Risks associated with the system and desired outcome:

g. Crashes and errors on the system: System crash and system inaccessibility due to a technical error in the system.

**Impacts**: It may take several hours or days for this error to be found and fixed. Some tasks and processes may be disrupted.

**Mitigation**: It should be considered which tasks and processes will be disrupted and how they will affect other processes. Alternative ways should be produced so that the processes that will be affected can continue.

h. Cyber-attacks: Today, no system is there which is free from cyber-attack. Malicious people target and attack systems for different reasons. These may be reasons such as obtaining personal and sensitive information, capturing and changing data, and demanding ransom. There are different types of cyber-attacks such as malware, ransomware, phishing, denial of services (DoS), distributed denial of services (DDoS), and password attacks.

**Impact**: It affects the company in the form of loss of business contracts, disruption of trade, theft of money, loss of customers, decrease in sales. It can damage or destroy the business's reputation. It may cause legal troubles within GDPR (General Data Protection Regulation) and land in court. In such a case, heavy financial and regulatory sanctions may be imposed.

**Mitigation**: Each type of attack has a different method of prevention. Working with the data security team and vendors, each method should be implemented, and security should be maximized. Since AppSheet is a Google product and uses Google Sheets as its database, the security measures recommended by Google should also be followed. Google is constantly improving and updating its security measures. These updates should be followed closely and implemented on time.

i. Disclosure of sensitive information: Internal disclosure of sensitive information that may arise if access to certain information is given to unauthorized users.

**Impact**: It can lead to arguments and complaints within the company. It can undermine employees' trust in the company and the HR team. In rare cases, these data can be stolen or compromised by some employees.

**Mitigation**: Different access levels should be established and carefully implemented. The rules regarding the theft and dissemination of data by employees in the privacy policy should be reviewed and updated if necessary.

j. Data loss or theft: Data can be stolen or lost due to human error, malicious attacks, software corruption, and even employees.

**Impact**: Data lost due to reasons other than malicious attacks may cause to lose monitored metrics. In case of data loss due to malicious reasons, the effects specified in cyber-attacks will also apply here.

**Mitigation**: Monitored metrics should be regularly reported independently of the database. Effects can be reduced by anonymizing personally identifiable information. The mitigations that apply to the cyber-attacks are also applicable here.

k. Excessive data collection: Collecting data which are unnecessary at the moment, considering that it may be useful in the future.

**Impact**: It is expensive to store all the data collected. It may cause legal troubles.

**Mitigation**: This risk can be avoided by minimizing data collection.

According to these evaluations, the risk score was obtained by multiplying the probability and impact scores of potential risk sources.

Table 9 Score calculation of risks associated with the system and desired outcome (own processing)

| Risk no | Risk | Impact | Probability | Risk Score |
|---------|------|--------|-------------|------------|
| R7 | Crashes and errors on the system | 2 | 3 | 9 |
| R8 | Cyber-attacks | 5 | 2 | 10 |
| R9 | Disclosure of sensitive information | 4 | 1 | 4 |
| R10 | Data loss or theft | 5 | 2 | 10 |
| R11 | Excessive data collection | 4 | 0 | 0 |

The risk scores obtained were placed in the risk matrix to demonstrate acceptability (Figure 11) This matrix demonstrates the real effects of risks. Risks with a score of less than 5 are considered low risk, those between 5-10 are considered medium risk, and those with a score above 12 are considered high risk. Matrix can be used as a guide when developing a risk management strategy.
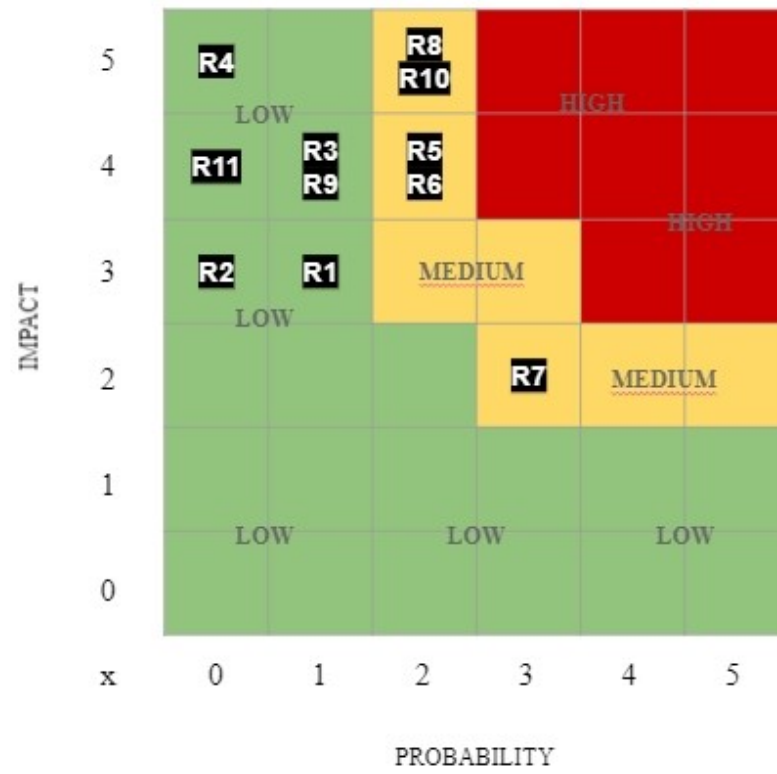
Figure 11 Risk matrix (own processing)

# CONCLUSION

This master's thesis focused on analyzing the problems of the HR team of the chosen company and proposing a solution. The proposed solution was to develop a human resource management system that leverages the emerging technologies. This study can be considered as a business case which includes analysis of current systems and processes, along with the findings and recommendation.

The HR team currently suffers from the lack of automation and strategic human resource management. Almost all HR activities are carried out traditionally. This results in the team being overloaded with manual work. Therefore, they cannot devote time to strategic and value-adding HR activities. This is a major obstacle for the company to achieve its aspiration which is to become the best employer in its sector. On the other hand, the company does not benefit from technological developments and trends – although it is a technology company. If the company wants to achieve its "best employer" goal, it can no longer ignore the trends, especially in human resources.

The study successfully answered all the research questions. The issues to be considered while developing a human resources management system are discussed in the analysis part in the light of theoretical background. These issues constitute this project itself, which range from project planning to analysis of needs, from design to cost, time, and risk analysis.

The study also answered the question of what trends the company should follow to meet its needs. To meet its needs, the company should leverage artificial intelligence and gamification. AI can significantly improve recruitment, learning and development, and employee satisfaction functions. Gamification can improve the employee experience and increase the effectiveness of both onboarding and learning and development.

Finally, the overarching research question was the subject to the project. It has been revealed by the analysis that the current human resources system, which is developed on a low-code platform, cannot meet the needs. However, it is seen that the company does not leverage the platform enough. The platform offers a huge flexibility thanks to the features and extensions it offers. With API integration, artificial intelligence and gamification can be integrated. In that case, almost all the needs of the human resources team will be met.

The primary purpose of this study was to help the company to make the best decision for both itself and its employees. It is obvious that the company needs a human resources management system. However, in order to limit the length of the study in line with academic

requirements, this project only elaborated on upgrading the existing system. Therefore, the company should consider all solutions in detail before making the final decision on how to obtain the system.

Thanks to this study, I had a chance to discover different aspects of human resources which I have never experienced before. The study also helped me to certainly decide in which area of human resources I want to focus in the future.

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# LIST OF ABBREVIATIONS

ADP – Automatic Data Processing, Inc

AI – Artifical Intelligence

API – Application Program Interfaces

CEO – Chief Executive Officer

CTO – Chief Technology Officer

CV – Curriculum vitae

CxO – C-level executives (e.g. CEO, CFO, CTO, CPO...)

DDoS – Distributed denial of services

DoS – Denial of services

GDPR – General Data Protection Regulation

HCM – Human Capital System

HR – Human resources

HRIS – Human Resource Information System

HRMS – Human Resource Management System

ISMS – Information Security Management System

IT – Information Technology

L&D – Learning and Development

LMS – Learning Management System

MSP – Managed Services Provider

NDA – Non-Disclosure Agreement

NPS – Net Promoter Score

ROI – Return on Investment

SAP – Systems, Applications, and Products

SHRM – The Society for Human Resource Management

SMART – Specific, Measurable, Achievable, Relevant, Timely

UI – User Interface

UX – User Experience

XYZ – alias of the chosen company for the project

## LIST OF FIGURES

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## APPENDICES

Appendix P I: An Exemplary Onboarding Plan

Appendix P II: An Exemplary Competence Matrix

Appendix P III: Template for Weekly Performance Meetings

Appendix P IV: Template for Project Closure Report

# APPENDIX P I: AN EXEMPLARY ONBOARDING PLAN

| **Name:** John Smith<br>**Start Date:** Sunday, November 01, 2020<br>**End of Trial Period:** Sunday, January 31, 2021<br>**Assigned Buddy:** Adam Johnson | | | Overall Complete: 95,60%<br><br>*Min. 85 % to succesfully pass the trial period*<br>*Min. 95 % to be entitled to salary increase* | |
|---|---|---|---|---|
| Section Total= | | 43 | 48 | |
| Section Complete= | | 43 **100%** | 44 **91%** | |
| **People You Need to Know** | | **Yes (1) / No (0)** | **Processes You Need to Know** | **Yes (1) / No (0)** |
| **Operations Team** | | | **Human Resources Processes** | |
| Jennifer Jones | Operations Associate – G suite | 1 | Remote first principles | 1 |
| Michael Brown | Operations Associate – G suite | 1 | XYZ values and DNA | 1 |
| David Wilson | Operations Associate – G suite | 1 | Leave of absence approval | 1 |
| Bridget Cook | Operations Associate – Infrastructure | 1 | XYZ social profile | 1 |
| Daniel Fernandez | Operations Associate – Infrastructure | 1 | How to work with me | 0 |
| Stephanie Young | Operations Engineer | 1 | ISMS | 1 |
| Joe Garrett | Operations Engineer | 1 | BOZP | 1 |
| Guy Jackson | Operations Senior Engineer | 1 | **Operation Processes** | |
| **Delivery Team** | | | Google WorkSpace Transfer, Upgrade, Suspend | 1 |
| Martin Armstrong | Team Leader and Project Management | 1 | Freshdesk, Freshcaller Guidelines | 1 |
| Ryan Tompkins | Delivery Cloud Engineer | 1 | Google Support Case Management | 1 |
| Lisa Tyler | Cloud Engineer | 1 | Cloud Operations Guidelines | 1 |
| Stephen Harris | Delivery Cloud Architect Senior | 1 | Billing and Invoicing Processes | 0 |
| Kim Taylor | Cloud Architect | 1 | New Customer Onboarding Process | 1 |
| **Development Team** | | | Team Ceremonies | 1 |
| Tereza Thompson | Product Owner | 1 | Career plans and evaluation | 1 |
| Toby Ramsey | Back-end Developer | 1 | Operation's Notion pages | 1 |
| Kevin Black | Front-end Developer | 1 | **Delivery Processes** | |
| Bernard Neal | External Consultant | 1 | Delivery Project Management | 1 |
| **CxO Team & Managers** | | | **Development Processes** | 1 |
| Amy Miller | Human Resources | 1 | Product Development | 1 |
| Nick Tompkins | CTO – Production Strategy and Vision | 1 | **Sales Approach** | |
| Adam Barber | CEO - Strategy | 1 | Company Strategy (the journey to MSP) | 1 |

(own processing[2])

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[2] All names are made up using the most common English names and surnames.

| Name | Role | Done |
|---|---|---|
| Nicole Kelley | Partner Manager – Google //AWS ecosystem | 1 |
| Sarah Watts | Customer Success | 1 |
| George Parsons | Sales | 1 |
| **Marketing** | | |
| Megan Hale | Digital Channels and community management | 1 |
| **Customer Success** | | |
| Chris Hall | Customer Success Engineer | 1 |
| **Finance** | | |
| Allie Fisher | Billing Specialist | 1 |
| **Sales** | | |
| Thomas Hampton | Sales Representative | 1 |
| **Team Meetings** | **Description** | |
| Sales | Visit at least 2 team meetings (to listen) | 1 |
| WorkSpace | Visit at least 2 team meetings (to listen) | 1 |
| Customer Success | Visit at least 2 team meetings (to listen) | 1 |
| Finance | Visit at least 2 team meetings (to listen) | 1 |
| Delivery | Visit at least 2 team meetings (to listen) | 1 |
| **Other meetings** | | |
| TGIF | Visit at least 2 meetings (once for introducing yourself, then for listening) | 1 |
| **Shared Platforms You Need to Know** | **Yes (1) / No (0)** | |
| Notion | | 1 |
| Chat/Slack | | 1 |
| Drive shared folders | | 1 |
| HubSpot+PandaDoc | | 1 |
| XYZ App (AppSheet) | | 1 |
| Partner Advantage (Google Cloud) | | 1 |
| APN Portal (AWS) | | 1 |
| Freshdesk | | 1 |
| FreshCaller | | 1 |
| MyServices | | 1 |

| Item | Yes (1) / No (0) |
|---|---|
| B.A.N.T. | 1 |
| XYZ Sales Process (mainly for Delivery Process) | 1 |
| Listen 5 XYZ Sales Success Stories | 1 |
| Understand rebates & vendor fundings concepts | 1 |
| Describe other services in digital workspace (Chrome, Okta, MDM, AppSheet…) | 1 |
| **Products You Need to Know — Yes (1) / No (0)** | |
| Google Workspace licences understanding | 1 |
| XYZ Cloud Reselling | 1 |
| XYZ CloudOps | 1 |
| XYZ Cloud Support | 1 |
| XYZ Lift and Reshape Migrations | 1 |
| GitOps | 1 |
| CloudSprint | 1 |
| Billing Analysis | 1 |
| Architecture Review | 1 |
| AWS Compute (EC2, EKS, ECS, Fargate) | 1 |
| AWS Security, Identity, Compliance | 1 |
| AWS Networking, Containers, Databases | 1 |
| AWS Monitoring | 1 |
| AWS Logging | 1 |
| GCP (Engines – App, K8S, Compute, Cloud Run) | 1 |
| GCP Security, Identity, Compliance | 1 |
| GCP Networking, Containers, Databases | 1 |
| GCP Monitoring | 1 |
| GCP Logging | 1 |
| **Shadowing Steps You Need to Do — Yes (1) / No (0)** | |
| Shadow 3 Customer Onboarding Calls (G Suite, GCP, AWS) | 0 |
| Shadow 3 Team Planning Sessions | 0 |
| Shadow 3 topic specific meetings + follow up meetings | 1 |
| Be Shadowed on 5 meetings | 1 |

(own processing)

| | John | Brad | Will | Donna | Dana | Sam |
|---|---|---|---|---|---|---|
| **Web Programming** | | | | | | |
| PHP | 3 | 1 | 1 | 2 | 4 | 3 |
| Propel | 1 | 1 | 1 | 2 | 3 | 3 |
| PHPUnit | 2 | 2 | 1 | 2 | 3 | 3 |
| Symfony | 2 | 0 | 1 | 2 | 2 | 3 |
| CSS | 3 | 0 | 1 | 1 | 3 | 2 |
| Selenium | 2 | 0 | 0 | 0 | 3 | 3 |
| Java Script | 2 | 1 | 0 | 3 | 3 | 3 |
| CSS | 2 | 1 | 1 | 1 | 4 | 4 |
| SOAP | 2 | 0 | 1 | 1 | 3 | 2 |
| HTML 4 | 3 | 2 | 0 | 1 | 3 | 3 |
| HTML 5 | 3 | 1 | 0 | 2 | 3 | 2 |
| **Java** | | | | | | |
| jQuery | 0 | 1 | 3 | 2 | 0 | 0 |
| JUnit | 0 | 3 | 3 | 2 | 0 | 1 |
| Java Beans | 1 | 3 | 2 | 2 | 1 | 1 |
| JBoss | 0 | 2 | 3 | 1 | 1 | 1 |
| Java EE | 0 | 3 | 2 | 1 | 2 | 1 |
| RPC | 0 | 1 | 3 | 1 | 0 | 1 |
| **Tools** | | | | | | |
| Git | 3 | 4 | 1 | 1 | 1 | 3 |
| SVN | 0 | 4 | 0 | 2 | 3 | 3 |
| NetBeans | 0 | 1 | 0 | 1 | 3 | 2 |
| Bash | 2 | 3 | 1 | 0 | 2 | 3 |
| Apache | 2 | 2 | 0 | 0 | 3 | 2 |
| Eclipse | 4 | 2 | 2 | 0 | 1 | 3 |
| Jenkins | 1 | 3 | 1 | 1 | 1 | 3 |
| Gimp | 1 | 1 | 0 | 2 | 2 | 0 |
| **Techniques** | | | | | | |
| Design Patterns | 2 | 2 | 1 | 3 | 1 | 2 |
| Pair Programming | 2 | 1 | 2 | 0 | 3 | 0 |
| UI Design | 2 | 0 | 0 | 2 | 0 | 2 |
| Dojo | 3 | 3 | 2 | 2 | 2 | 0 |
| English | 3 | 1 | 3 | 0 | 2 | 3 |
| Spanish | 0 | 2 | 0 | 2 | 3 | 2 |
| Chinese | 2 | 2 | 1 | 1 | 2 | 2 |
| Polish | 0 | 0 | 2 | 0 | 3 | 1 |
| **Plugins** | | | | | | |
| OrangeX | 3 | 0 | 2 | 1 | 0 | 3 |
| OrangeY | 1 | 1 | 2 | 0 | 2 | 2 |
| OrangeGrinder | 2 | 2 | 0 | 3 | 2 | 3 |
| SysMachine | 1 | 0 | 0 | 2 | 0 | 1 |
| PlayWize | 1 | 0 | 0 | 2 | 0 | 0 |
| BigBrother | 0 | 0 | 2 | 2 | 3 | 2 |
| GrphicsServer | 3 | 2 | 0 | 2 | 0 | 0 |
| DBSalute | 1 | 1 | 3 | 1 | 1 | 2 |
| TokenMaster | 2 | 1 | 2 | 1 | 2 | 0 |
| **Reporting System** | | | | | | |
| FormGenerator | 1 | 1 | 0 | 1 | 0 | 1 |
| PanelMaster | 1 | 0 | 1 | 2 | 0 | 1 |
| MeatGrinder | 1 | 1 | 0 | 1 | 1 | 0 |
| ReportDruid | 0 | 0 | 1 | 0 | 0 | 0 |
| **Storage** | | | | | | |
| Sales Database | 1 | 2 | 1 | 3 | 0 | 0 |
| Archive Repo | 1 | 0 | 0 | 3 | 0 | 0 |
| DB Migration | 0 | 1 | 0 | 3 | 1 | 0 |
| Human Database | 0 | 0 | 1 | 2 | 0 | 1 |

(KaTe, 2013)

**APPENDIX P III: TEMPLATE FOR WEEKLY PERFORMANCE MEETINGS**

# Weekly Performance Meeting

📄 **Project:**  HRMS Development

👥 **Participants:**

📅 **Date:**

👤 **Project Manager:**

## Project Status

☐ On track ☐ Behind ☐ In danger

## Budget

☐ On track ☐ Exceeded

## Accomplished This Week

| Tasks for Next Week | When? |
|---|---|
| | |

| Obstacles to Be Removed | Action | Who? | When? |
|---|---|---|---|
| | | | |

## Comments

(own processing)

# Project Closure Report

📑 **Project:** HRMS Development

👥 **Participants:**

📅 **Date:**

👤 **Project Manager:**

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**What went well?**

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**What could be better?**

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**Lessons learned**

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**Checklist**

☐ Ensure the project scope is complete.

☐ Solicit feedback from key stakeholders.

☐ Record the lessons learned.

☐ Archive the project documents.

☐ Celebrate project completion with awards and recognition.

(FranklinCovey, 2017)