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Developing a Work Personal Development Process and Personal Development Plan Template for an Engineering Design Company

Metropolia University of Applied Sciences

Master of Engineering

Industrial Management

Master's Thesis

02.05.2023

Preface

This master's thesis represents the culmination of my academic journey in Industrial management and my contribution to the field of work personal development.

One of my previous educations was purely in engineering; another was in social science; therefore, it was so exciting to produce a Master’s thesis with a topic that combines both industrial and human relations fields. The idea for the thesis was equally generated by personal intention and company needs.

The work presented here is the result of months of research and writing and would not have been possible without the support of many people.

First of all, I would like to express my appreciation to my supervisors. To Dr. James Collins, for his endless energy, effective guidance, strong support, and informative feedback throughout the entire process. To Sonja Holappa, M.A. for her continuous encouragement and positive attitude. To Dr. Thomas Rohweder for the deep analysis of complicated cases. And to Dr. Sami Sainio for his thoughtful leadership and immediate reactions.

My special, warmest gratitude to my course mates. It was a precious possibility to have them around to learn, exchange, and have fun.

Additionally, I am grateful to my colleagues, who generously gave their time and shared their experiences with me. Their insights and support have been essential in shaping the direction of this research. I am deeply appreciative of the enthusiasm and trust they granted me during my research.

Finally, I’m endlessly thankful to my family, and especially to my husband, for their love and encouragement throughout my degree program. Their faith and support gave me the energy to move ahead toward my goal.

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May 02, 2023

Abstract

Author(s):	Maria Ilmast
Title:	Developing a work personal development process and personal development plan template for an engineering design company
Number of Pages:	84 pages + 2 appendices
Date:	02 05 2023
Degree:	Master of Engineering
Degree Program:	Industrial Management
Specialisation option:	Service Management
Instructor(s):	Dr. James Collins, Senior Lecturer Sonja Holappa, M.A., Senior Lecturer

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This master's thesis is focused on the creation of a work personal development process and personal development plan template for an engineering design company.
Employing the applied action research method, the data was collected through a combination of interviews with employees and management, a review of relevant literature, and a validation workshop.
The findings of the current state analysis revealed inconsistencies in the existing development approach of the company, indicating a need for improvements. Based on these findings and best practices collected from literature studies, a comprehensive work personal development process and personal development plan template were designed and presented to management for validation and further implementation within the company.
Overall, this thesis provides an efficient framework for integrating a structured employee development process within a geotechnical department of an engineering design company and hands over a tool for the company to actively manage the professional growth of the employees.
The designed work personal development process aims to aid the case company in ensuring its market position and achieving its strategic goals.

Keywords: Work personal development, Personal development plan, Competence map, Development process tracking

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Acronyms

FISE	FISE Oy is an enterprise for verifying the certifications of persons
CSA	Current state analysis
G.O.O.D.	Performance development review (Goals, Obstacles, Opportunities, and Decisions)
HR	Human Resources
HRM	Human resource management
OKR	Objectives and Key Results, goal setting and leadership tool
PDP	Personal Development Plan
SKOL	the Finnish Association of consulting firms.

1 Introduction

To perform its activities in the best possible way, every company is interested in qualified and competent employees. While some employees are proactive, taking independent measures to facilitate their own professional growth, others may remain passive and fail to progress without external support. It is important to note that in most cases, employees may not fully comprehend the overall company direction or goals.

Therefore, the company should be responsible for the professional development of its workforce in accordance with its strategic objectives, and in that case, the initiative for staff development derives strongly from the company.

1.1 Business Context of the Case Company

The case company is a Finnish engineering design company based in Helsinki with an SME type of business. The company consists of 3 departments: Geotechnical, Survey, and Ground investigations. The Survey and the Ground investigations departments are almost equal in the number of employees and are formed without subdivisions. The Geotechnical department is the biggest and contains five subgroups. Each group is managed by the group leader and consists of 2-6 group members.

The company performs the full cycle of geotechnical design, from soil investigations and environmental studies to extremely difficult excavation design and foundation recommendations. The staff of the company also varies greatly: from drillers to senior geotechnical engineers.

The case company has been existing on the market for more than 50 years. The main trend of personnel flow remains stable, with employees tending to stay in the company for a period of 10 – 15 years provided they do not leave within the first few years of their employment.

1.2 Business Challenge, Objective, and Outcome

Due to big differentiation in working tasks, employees of the company perform various duties, from soil drilling to demanding engineering design.

Currently, no formal process to create a personal development plan is established. The most active workers take control of their own development, creating their own methods of professional skill enhancement. The management is extremely supportive and generally approves requests for additional education or qualification courses; as a result, initiative workers grow and improve the overall quality of the company. The company itself periodically initiates education for engineering staff, ordering services from local universities. This allows to maintain a certain level of general product quality while not developing unique competencies. However, an unsolved problem remains as workers are unsure of which direction they should develop and what such development entails. In other words, while some employees are offered development opportunities, others are only provided with maintenance activities.

Due to such neglect of the development process, employees are often lost in the company and suffer from a lack of support and goal setting.

As a result, the professional development of such workers is slow, and they are less motivated to take on additional responsibilities. Therefore, group leaders are overloaded and are unable to delegate tasks effectively due to a lack of capable personnel.

The objective of this study is to create a work personal development process and PDP template for the Geotechnical department.

The outcome of this thesis is the work personal development process and PDP template for the Geotechnical department.

1.3 Thesis Outline

The Thesis consists of seven chapters. Chapter 1 is the Introduction. Chapter 2 describes the Project plan, presented in more detail as the research approach, research design, and data plan. Chapter 3 presents the current state analysis of the personal development process in the case company. After the evaluation of the current situation, Chapter 4 contains the literature research regarding the existing knowledge related to the topic, which results in Chapter 5 in the design of the draft proposal for the process of work personal development. Chapter 6 contains an illustration of the designed process update and validation after discussions with stakeholders. Finally, Chapter 7 presents the conclusions and evaluation of this work.

The current work includes the design of the work personal development process only for the Geotechnical department. That process is to be assigned as a pilot and, after some adjustment, can be used as a template for other departments. Such adjustments and creation of processes for the Survey and the Ground investigation departments are to be performed outside of the current thesis.

2 Project Plan

2.1 Research Approach

A suitable approach must be chosen before conducting the research. The proper type of approach depends on different factors, such as the research aim, dimension, precision, boundaries, and limitations.

The three common approaches to conducting research are quantitative, qualitative, and mixed methods. (C. Williams, 2007). The goal of qualitative research design is to discover responses to questions such as "How it shall be done and why?". It establishes links between the observations and the data obtained. Quantitative research design addresses the questions of "who, what, where, how, and when" through the course of the investigation. Additionally, the results of the quantitative analysis are easy to depict using statistics, graphs, charts, and numbers. C. Williams (2007) refers to Creswell (2003); Johnson & Onwuegbuzie (2004); Tashakkori and Teddlie (1998) and considers that the mixed methods approach to research combines quantitative and qualitative data collection and analysis techniques in a single research study.

The main research type that uses a qualitative approach is applied action research.

The goal of applied research is to find a solution to a specific problem. The researcher is deeply involved in problem identification, the design of research suggestions, and their trial via an experiment.

Action research is a type of applied research. It explains how to solve business challenges in a practical way.

The current research is a practical development project to design a specific process. The author of the thesis has been dealing with the mentioned challenge for a certain time and has had close involvement in the process. Due

to these facts, it was decided to use an action research approach with qualitative methods for the current research and utilize the main qualitative research methods for data collection, such as case studies, observation, interviews, and workshops.

2.2 Research Design

The current research consists of several stages. The approach, topic, content, and outcome of these stages are presented in Figure 1 below.

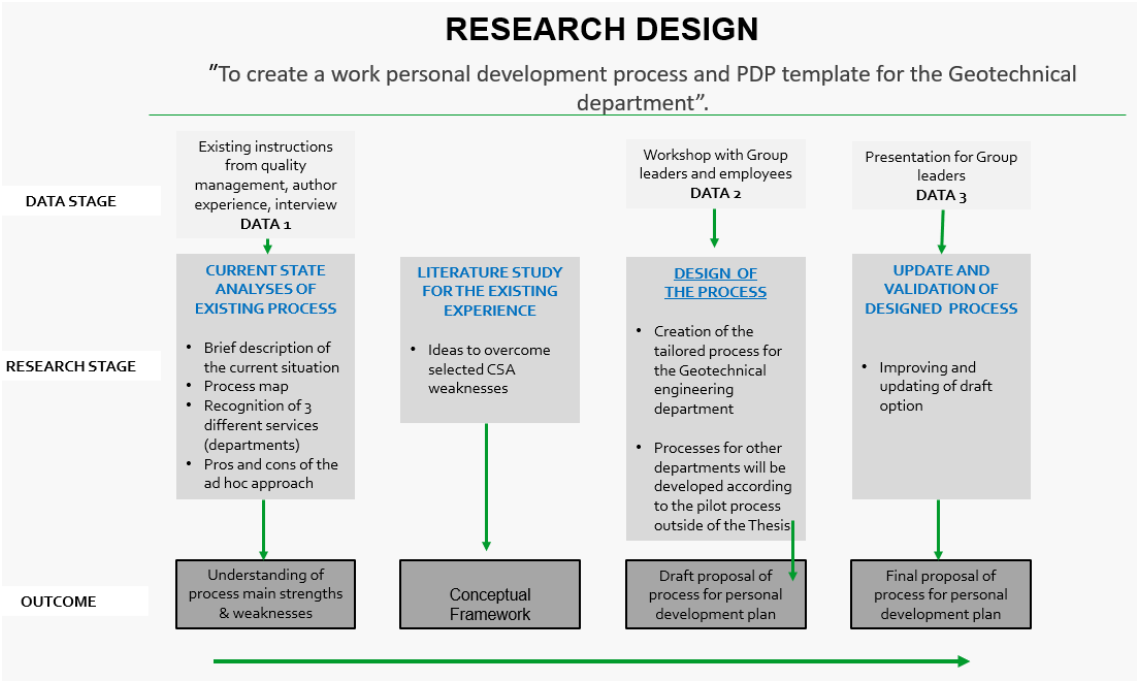

Figure 1. The illustration of the research design process.

Figure 1 shows that in the first stage, which is the current state analysis of the existing process, the research describes the actual situation in the company regarding the personal plan development problem. For this purpose, the process map is developed, independent units of the company are distinguished, and the ad hoc approach is analyzed for positive and negative components. Data 1 is derived from existing quality management instructions, author experience, and interviews with stakeholders. This type of analysis allows to

highlight the strengths and weaknesses of the current position, which leads to the second step of the design process.

Literature research is the second stage of the project design. This stage allows to find ideas to overcome the process weaknesses, found in the previous stage. The conceptual framework is the outcome of the second stage.

The third stage of the research is the design of the process. Data 2 is collected at that stage out of the workshops with group leaders and employees. The process is developed only for the Geotechnical engineering department of the company and then used as a pilot process for other departments. Such a decision was made to keep the research size adequate and begin process implementation with the trial version due to an easier update and control procedure. After the pilot process is settled, processes for other departments have to be developed outside of the current thesis. The outcome of stage 3 is the draft proposal of the process for the personal development plan, which can be presented for further comments.

Data 3 is received as feedback from the presentation for the group leaders. This information initiates stage 4, which is an update and validation of the designed process. Improving and updating the draft proposal leads to the final proposal of the process for the personal development plan as the outcome.

2.3 Data Collection Plan

The research has three types of data collected. The correspondence between data and stages was described in the previous chapter. In this chapter, more precise information regarding every type of data is presented.

The data collection plan is presented in Figure 2.

	CONTENT	APPROACH	SOURCE OF INFORMATION	SCHEDULE	OUTCOME
DATA 1 CURRENT STATE ANALYSES OF EXISTING PROCESS	- Brief description of the current situation - Process map - Recognition of 3 different services (departments) - Pros and cons of the ad hoc approach	- Analysis of documents - Employees interview	- Existing instructions from quality management - Group leader of the Geotechnical department - Team members with different working experiences in the company - Author experience	JANUARY 2023	Understanding of process strengths & weaknesses
DATA 2 DESIGN OF THE PROCESS	- Creation of a tailored process for the Geotechnical engineering department - Processes for other departments will be developed according to the pilot process outside of the Thesis	- Personal discussions with group leaders of the department	- Group leaders of the Geotechnical department	MARCH 2023	Draft proposal of the process for the personal development plan and PDP template
DATA 3 UPDATE AND VALIDATION OF DESIGNED PROCESS	- Improvement and update of draft proposal	- Workshop and Presentation for group leaders of the department	- Group leaders of the Geotechnical department	MARCH 2023	The final proposal of the process for the personal development plan and PDP template

Figure 2. The data collection plan.

According to Figure 2, Data 1 is the initial source of information for the further development of the process. The company has developed a quality management system with integrated development process instructions that are designed to be used as routines. These instructions are one of the components of Data 1. The other component is presented by interviews. Interviews with group leaders are needed to investigate why an integrated process is not sufficient and what are the expectations of group leaders for the employee development process. Interviews with other employees allow to estimate the problem from another point of view and check it from the point of view of the person whose development plan is under question.

The detailed information concerning Data 1 collection is presented in Table 1.

Table 1. Data 1 detailed information.

N	Source of information	Data type	Date, Time	Agenda	Can be found
1	Documents from the Quality management system	Document (word file)	June 2019	Template for personal development discussion	Confidential business information
2	Interview 1 Project manager, designer	Field notes	24.01.2023 10.00 – 10.32	Personal development, motivation, and communication with team leaders	Attachment 1
3	Interview 2 Technical director	Field notes	24.01.2023 13.50 – 14.25	Personal development of team members, motivation, and communication with them	Attachment 1
4	Interview 3 Designer assistant	Field notes	24.01.2023 16.30 – 16.50	Personal development, motivation, communication with team leaders	Attachment 1
5	Interview 4 Designer assistant	Field notes	25.01.2023 10.25 – 11.00	Personal development, motivation, communication with team leaders	Attachment 1

The next round of data collection was performed after the literature study and conceptual framework creation. In the third stage, Data 2 was collected by conducting discussions with group leaders of the geotechnical department, where ideas and suggestions considering the creation of the development process and its components were discussed. The draft of the development process was created as a result of these discussions. Details for described Data 2 collection are presented in Table 2

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Table 2. Data 2 detailed information.

N	Source of information	Data type	Date, Time	Agenda
1	Personal discussion with Group Leader 1	Field notes	1 March 2023	Ideas and suggestions considering: • process of personal development and personal development plan template, • process and template for competence map, • development process tracking
2	Personal discussion with Group Leader 2	Field notes	2 March 2023	
3	Personal discussion with Group Leader 3	Field notes	3 March 2023	

Data 3 is part of the validation stage and collected the information for the process of designing a final proposal for the personal development plan. At that stage, a draft description of the process was presented to group leaders of the geotechnical department, and feedback was received during the workshop. Detailed information for the process of collection Data 3 is presented in Table 3.

Table 3. Data 3 detailed information.

N	Source of information	Data type	Date, Time	Agenda
1	Workshop with group leaders	Minutes of the meeting	15 March 2023	Draft proposal for • process of personal development and personal development plan template, • process and template for competence map, • development process tracking

Chapter 2 provided information on the accepted research approach, opened the content of the research design, and described the data collection plan. The next chapter presents the current state analysis of the existing process.

3 Current State Analysis of the Existing Development Process

Chapter 3 describes the current state of the development process in the company, its analysis, and a summary of strengths and weaknesses. This section identifies three different services provided by the case company and reveals the pros and cons of the existing approach.

3.1 Overview of the Current State Analysis

For the current state analysis, several different information sources were used: the existing official template for personal development discussion, interviews with employees, and the experience of the author.

The existing official template was created several years ago when the company developed a Quality management system to obtain an ISO 9001 certificate. For this purpose, all obligatory processes were documented and visualized as various descriptions, process maps, and templates. The development process was settled and formalized as well, and a proper template for the annual discussion was introduced to the management. With time, it became clear that the created template was more of a tool for assessment discussions than for development planning.

As another source of information, personal interviews with the workers were used. The dates and time for interviews were agreed upon with the participants in advance. Conversations were conducted according to a pre-written list of questions, and interviewees were free to discuss relevant topics as they arose. When the respondent had nothing more to say concerning the previous subject, the following draft question was posed.

For the personal interviews, it was decided to divide the respondents into three groups. The first group consisted of the top managers, who are also the group leaders, and the senior designers. The respondents in this group can analyze

the dependence between the personal development of employees, the overall wellbeing of the company, and the correctness of strategic direction. These interviewees are the final consumers of the process; they are dealing with the result of the development of employees and are responsible for the profitability of the company.

Group 2 of respondents included employees with significant work experience in the company. They can provide weighted feedback on the current state of the development process, having been involved in the routine work of the company and having tried themselves as leaders of small groups. Such a combination provides experience from both sides of the process.

Group 3 consisted of designers with less than five years of experience. These employees still remember the time they started working for the company, and their development process is in its most active phase. The interviewees from Groups 2 and 3 are called junior designers or group members hereafter.

Due to the fact that interviewees from different groups see the problem from different perspectives, the drafted interview questions for the management group varied from the questions for the other groups.

The author of this thesis has a total of 19 years of work experience, 11 of which have been spent as a project manager at the case company. For the last five years, the author has been in charge of a large project with a high budget with 10 team members from the case company and approximately 15 in several subcontracting organizations. While working on that project, the author was assigned to one of the top positions in the company. All of these experiences provide an opportunity to combine the perspectives of Group 1 and Group 2 respondents, enabling rational decision-making at both the middle and senior management levels. The experience of the author is used throughout the thesis text as conclusions, findings, and suggestions.

In several of the last interviews, it was noted that the same thoughts and ideas were revealed as in previous conversations. Therefore, it was decided to stop the Data 1 field research since further surveys did not bring any added value.

3.2 Description of the Current Process

The company has been on the market since 1969, and all these years, the development of employees has been processed in one way or another. Every team leader has his own preferences and habits for communicating with the team members, just as every employee has their own expectations and views regarding development, support, and career growth.

The main approach to create a development plan has not significantly changed since the implementation of the official template for personal development discussion and process description in official quality management papers. Figure 3 represents the current situation in the company as a process map. The process map was developed based on information processed from interviews, available documents, and the personal experience of the author.

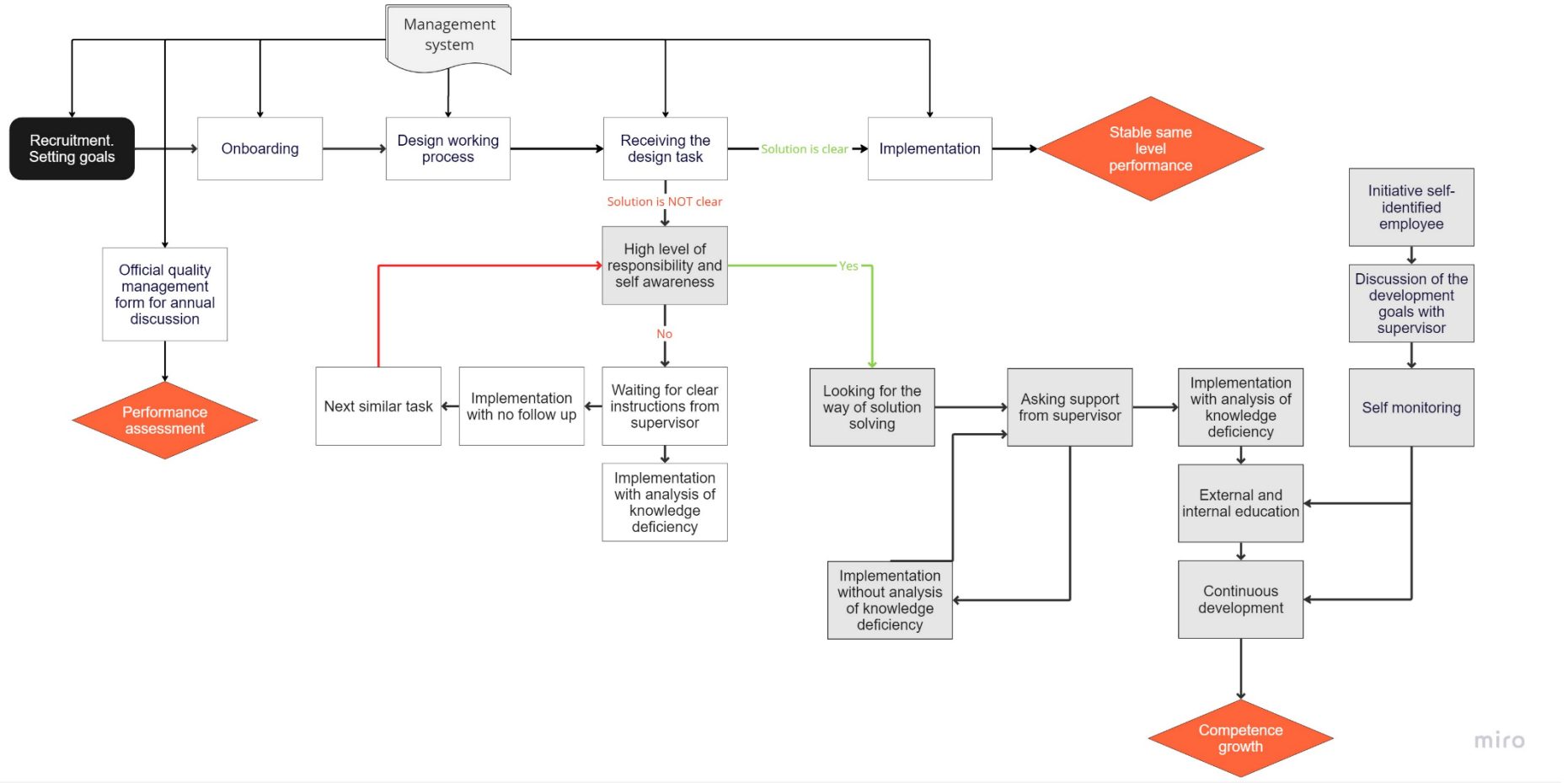


Figure 3. Process map of the current ad hoc process.

As seen in Figure 3, the process consists of several parts. The first part is the general path of every employee in the company, which is similar for everyone. It starts with recruitment, company introduction, or onboarding, and then the routine process of the work. The management system covers all these processes with general rules and instructions. The development discussions begin at the start of an employee's career in the company to determine the best way to integrate the employee into the process and continue systematically. The further development process can be initiated in two ways, either by the company or by the employee.

When initiated by the company, the process includes the official annual development discussion and the ad hoc process, where the supervisor analyses the necessity to develop the employee level due to a lack of his or her knowledge or due to the strategical goals of the company. Employee-initiated processes can be launched as a result of a personal attitude toward filling a knowledge gap discovered during the working process, or as a result of personal career advancement goals.

As can be observed the official procedure, as required by the management system, does not work the way it is supposed to. An initially good idea, which was properly approached and thought through, did not obtain any further evaluation by the management team and therefore failed.

The employee is assigned design-related tasks as an integral aspect of their routine work. If the task is clear, its implementation follows, and the worker continuously performs at the same stable level.

In cases where the task or its implementation method is not clear and the person in question has a high level of personal responsibility, a solution to the problem is sought. A solution can be found with the help of a supervisor or in some other personal way that stimulates the growth of competencies. The consequences may lead to further development progress if internal or external education is used, which usually forces continuous development and competence growth. If no analyses of knowledge deficiencies are performed,

the worker risks to stuck in the position when supervisor assistance is permanently required and fails with progressing.

The other option, which leads to continuous career growth, is the initiative of the employee with a clearly defined plan of development. Similarly, with or without assistance from the supervisor and the company, the employee shows consistent progress toward personal goals.

These were examples of employee-driven development. The other existing way is to initiate the process from the side of the company. The process can again be successful when the supervisor sees the knowledge gap or the strategic need of the company and proposes to the employee the option of professional development. In this way, the continuous process is successful if the desires and abilities of the company and the employee match together. If the employee is rigid or lacks motivation for development, the process can become a circle of problematic tasks to supervisor assistance and back again.

On a more personal and detailed level, the ad hoc development process is presented in Figure 4.

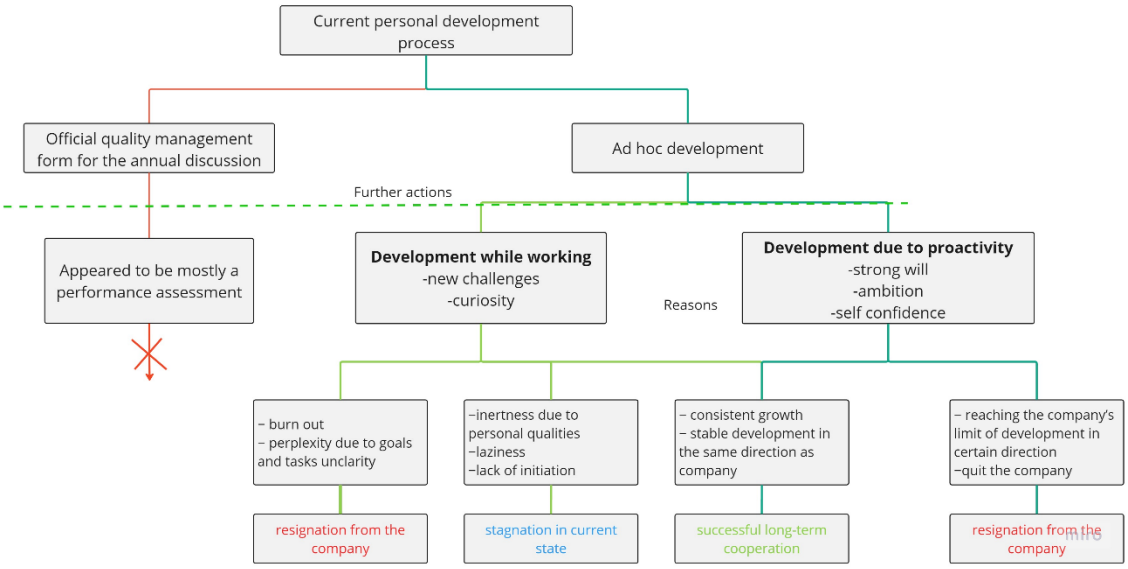


Figure 4. Approach map of the ad hoc development process.

As can be seen from Figure 4, the process is divided into two directions. The official quality system direction and ad hoc development.

As was said before, the official management procedure does not provide the development results, being only an assessment measure.

The ad hoc development process can be divided into two types. The first process type is so called "development while working," which occurs when a person is offered a difficult task and needs to study, research, ask for new information, or learn new skills to complete it. Alternatively, if the employee is curious regarding his or her own profession and wants to learn more, the other type of process is mutually followed by proactive workers who know exactly what they want to achieve and how to achieve it. Such workers represent the minority of the company and do not prevail.

Both processes have commonalities and differences in the resulting actions. In the worst cases, an employee leaves the company. Either as a result of burnout from overloading with unsuitable tasks or as a result of competence overgrowth. That is the most negative result for the company, which should be avoided due to the following losses in time, budget, and resources for the company.

In the best-case scenario, the initiative-driven, positive, and loyal employees find their way within the company and fully utilize the ad hoc development process. In cases where the development direction of the worker corresponds with the direction of the company, such cooperation may last for years.

The negative consequence of the "developing while working" process is stagnation. In the case where an inert person develops only by getting occasional challenges, these challenges might be skipped, rejected, or ignored, and no progress occurs for such a worker. If an employee lacks the internal drive to set career goals and lacks the creativity or motivation to advance without external support, they may become stuck in their current position without making any visible progress. This lack of progress does not bring any added value to either the person or the company.

3.3 Recognition of 3 Different Services

Three different departments, Geotechnical, Survey, and Ground investigations form the case company. The members of these departments perform working tasks that differ dramatically from each other.

The Geotechnical department is the largest and makes up the core of the company. The geotechnical engineers provide the tasks to the other two departments and use the result of their work in the design. The engineering work is done mostly in the office (with short-term site visits) by experts with high education. Such work demands a certain level of academic expertise, requires excessive responsibility, and is purely intellectual.

Members of the Survey and Ground Investigation departments mostly work in the field with a middle-level education and mostly physical work for the majority. The level of responsibility remains high for group leaders or site supervisors, who must ensure among others that no cable or pipe is damaged during drilling work and that surveyed coordinate systems are correctly set.

Similarities and differences in the professional development of engineers, drillers, and surveyors must be considered when creating personal development plans.

The consideration of development processes of all three departments appeared to be oversized and complicated in the context of the current thesis work. It was decided that the development process of the Geotechnical department is designed first, as geotechnical engineers are the majority in the company. Such a process, which is intended to be pioneering, must be tested, and adjusted to ensure its suitability for implementation in a professional way. After these steps, performed outside of the thesis, the development processes for the other two departments should be created and adjusted accordingly. This work can be done after the thesis work is completed.

3.4 Pros and Cons of the Ad Hoc Approach

The current state analysis was conducted based on 4 interviews, existing documents, and the personal experience of the author. This data allowed to audit the existing process and to reveal positive and negative aspects.

The existing documents cannot be presented in the attachment as it belongs to confidential business information, but it was properly studied during the current state analysis state. The document consists of a set of questions, aimed to describe the working position, lists of tasks, results in work for the last year, and operational objectives for the following year.

During the discussion, all the junior interviewees stated that the most significant benefit they received from the current process was unrestrained freedom in their development. As it was said by interviewee 1,

> Development can be done in any direction the person wants. (Appendix 1, respondent 1)

If they considered any skill to be deepened, upgraded, or even studied from scratch, they had the possibility to do it. All proposals were analysed and supported, either immediately or later.

The other strength of the process is the educational support from senior experts. Interviewee 4 admitted that:

> Senior engineers *always* find the time for teaching. (Appendix 1, respondent 4)

Engineering means not only academic skills but, in substance, experience, and a special way of thinking. When education is required by junior designers, assistance is made available and processed. In other words, advanced mentoring is at the highest level in the company.

When the development process is deemed as the result of work challenges, the employee can immediately see the applicability of new knowledge or skills to

their work and witness real results. It motivates more than the theoretical base received in courses, which can only be used if a proper case appears.

However, along with positive issues, plenty of negative factors also exist, making the development process slow and inefficient.

Mainly, respondents mentioned the absence of a settled official process as the main weakness, connecting it with a lack of stability, difficulty predicting progress, and inconsistent results. The interviews with the personnel revealed the fact that the annual conversations appeared to be more of an assessment review, checking the results of the past year and summarizing lessons learned. After filling out the form once a year, these papers are stored in archives and neither analyzed, nor monitored. In other words, an **ISO document is more of an assessment review than a development discussion.**

The connected weaknesses are incoherence between employee development and the strategy of the company, absence of development process introduction to the company, and lack of development system centralization.

The weaknesses mentioned above were underlined by both groups of respondents — senior and junior designers, or, in other words, management and team members.

One of the weaknesses mentioned in the interview was the absence of process tracking:

> The main weakness is that the plan is missing, there is no monitoring (Appendix 1, respondent 4).

In other words, it can be stated that **no formal development tracking** is in place.

The other weaknesses differ for distinct groups of respondents. The group leaders mentioned the rigidity of group members and their low response to any changes as the main weakness. The other notified weakness is a lack of

initiative to propose new responsibilities and development challenges. Thus, a **personal growth canvas is missing,** and no procedure for its creation is settled. A missing **employee net promoting score** can partly explain the lack of motivation**.** If no progress is measured, employees cannot follow it.

The analysis provided by the junior designers showed an understanding of insufficient communication between group leaders and group members. In several interviews, it was said that group members:

> …will be happy to have more instructions… more support…more guidance from group leaders. (Appendix 1, various respondents)

Additionally, many of the junior respondents emphasized that the most crucial soft skill for them to develop is communication. This may indicate that the community of junior designers is ready for changes even within the framework of the ad hoc process and could benefit from a push in that direction.

The engineer with significant working experience, who is acting as a project manager, mentioned, that a major weakness for him is:

> … the absence of a systematic education process. (Appendix 1, respondent 1)

In the same interview, it was also described as the inconsistency of the transfer of knowledge from senior to junior designers. Numerous approaches and methods exist for completing tasks in engineering. In the company, every group leader follows their own style and methods of work and design. It means that group members must adhere to these styles for the group to be consistent. But in the event that personnel are shifted between groups, which happens sometimes to equalize the working load, the new styles of design and decision-making principles must be learned, which takes time.

During the last several years, the workload has been significant in the company. Not only the top managers but the whole staff has been overloaded and lacking in time. The challenging tasks have been appearing more often than in the ordinary working process due to the number of tasks. But no time has been

reserved for a proper study or clarification process, which has led to design mistakes, endless corrections, and even more work. On the one hand, the problem arises as no special training or education is strategically planned, therefore no time has been booked for it in the working routine. The reason for it is the lack of **agreed key development areas.** The other reason for the overload of personnel is the absence of a specific **formal competence map for the department,** where every group leader can see the resources and corresponding competencies, and the gap in the competencies of the company can be revealed. The admitted fact is that the **competence matrix from ISO documents is too general** and does not allow estimating the real competence distribution in the company. One of the connected issues is the **chaotic rotation of employees** throughout the groups. While the competencies are randomly shared between staff members, the group leaders try to cover the gaps with any available workers instead of choosing the proper one for the role.

3.5 Summary of Strengths and Weaknesses of the Current Process

The preceding chapters provided a description and overview of the current development process of the company. Three different groups of respondents were interviewed, and their responses were processed.

Hence, it was possible to summarize the weaknesses and strengths, the summary of which is presented in Figure 5 below.

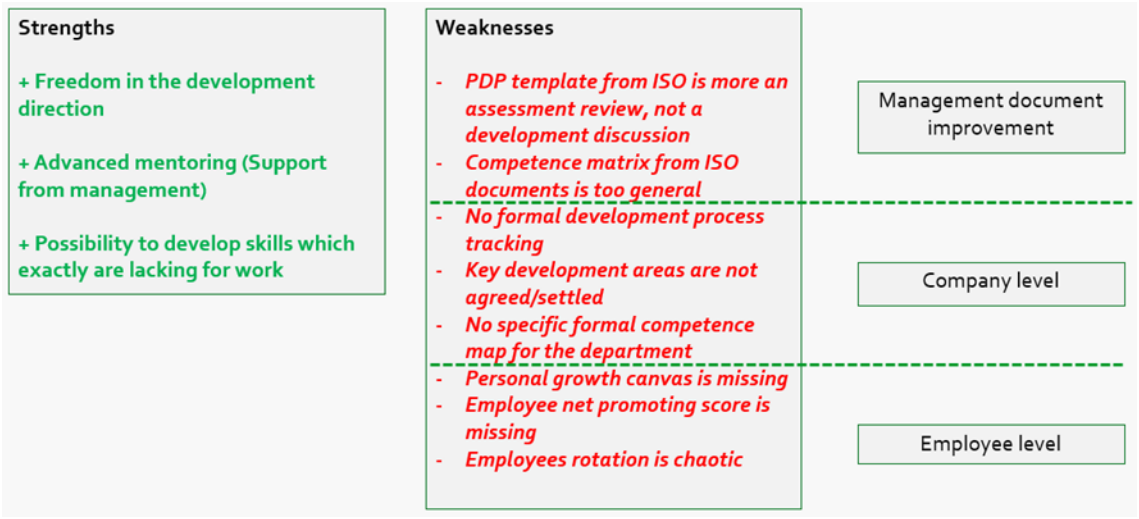


Figure 5. Strengths and weaknesses of the current process.

Considering the fact that only an ad hoc process exists in the company, it was helpful to obtain feedback, which shows the positive sides as well.

As expected, the current process of personal development contains plenty of weaknesses, which need to be improved, thus the company can create new opportunities and grow. The weaknesses presented in Figure 5 can be divided into three groups by the level of influence.

The first group concerns the weaknesses of the development process as reflected in the management quality system. The second group considers process inconsistencies at the company level. These are relationships on a general level that apply to every employee in the company to some extent. Weaknesses in that group shall be recognized by the board of the company, solved at the top management level, and, after improvement, integrated into the routine life of the company.

The third group of weaknesses describes the level of the employees and the relationships between management and subordinates. The interviews with both groups clearly showed the communication failure between group leaders and group members. It appeared that, despite a shared understanding of the importance of development and its mandatory presence in company processes,

the parties follow different perspectives on approaches and regard each side of the process to be the initiator.

The weaknesses for further consideration in this thesis are presented in Figure 6.

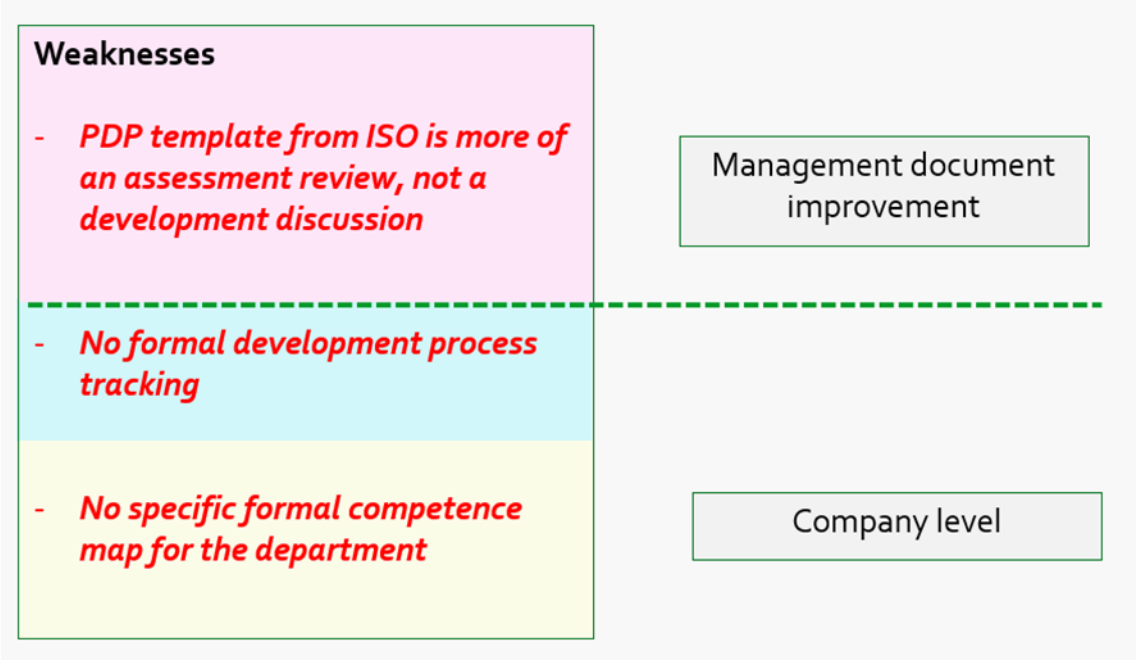


Figure 6. Weaknesses for further consideration.

The decision has been made to continue working on these weaknesses, as they are the vital components for achieving the intended outcome of the thesis, namely, the establishment of a work personal development process and template for a personal development plan. These weaknesses concern the process creation and enhancement of the process and facilitate the construction of a PDP template.

The encircled lines depicted in Figure 6 are color-coded according to the color markings attributed to the various stages of the development process presented in Chapters 5 and 6.

Concerning the group of management document improvement, outlined in Figure 5, the weakness of the general competence matrix from ISO documents

can be improved through the creation of a specific formal competence map for the departments, meaning the irrelevance of further consideration that item in the thesis.

The determination of key development areas for the organization is an aspect that falls within the ambit of the company's strategic planning and must be determined as part of that specific management system. Consequently, the identification of key development areas has been excluded from the scope of this thesis.

This section of the thesis is focused on presenting an analysis of the current development process employed by the case company. The analysis has revealed several deficiencies within the process that require attention and improvement to enhance the overall business performance of the enterprise. These deficiencies have been categorized into three groups (management documentation, company level, and employee level), and two of these groups (management documentation and company level) have been chosen for further elaboration.

Section 4 presents literature research, which focuses on ideas to overcome the selected weaknesses and provides the conceptual framework for this thesis.

4 Best Practices on the Creation of a Personal Development Process in an Organization

As a result of the current state analyses considered in Chapter 3, several significant weaknesses were revealed in the development process of the case company. These weaknesses were summarised in Figure 5, and some of them were chosen for further improvement, taking into account the scope and time limitations of this thesis. The chosen weaknesses were shown in Figure 6, chapter 3.

In order to provide a mature and weighted solution to overcome these weaknesses in the development process, it is important to look to relevant literature and research for ideas and solutions. The relevant approaches and best practices that can assist in optimizing current ad hoc operations and creating the right development process can be determined by taking a close look at the insights of experts and practitioners in that field.

In Chapter 4, the ideas from relevant literature have been explored, and these findings have been analysed for each of the process weaknesses. These concepts were examined to see if they could be modified and used by the case company.

The conceptual framework, presented at the end of this chapter, was created by integrating these concepts and linking them to the objective of the study.

According to Pracht (2023), several approaches exist for the development of employees in a company:

- The Reactive approach involves employees seeking help from supervisors when needed.
- The Mentoring approach focuses on individualized Personal Development Plans (PDPs) for each employee and is suitable for small teams where roles are unique.

- The Process approach utilizes fixed rules and procedures to dictate the development process and is suitable for companies with many repetitive roles.
- The Goal-Oriented approach involves breaking down the company's goals for employees and is suitable for companies with balanced resources.
- The "Make It Yourself" approach grants employees time and resources for self-development and is suitable for companies with a flat hierarchy, high transparency, and employee autonomy.

As a result of analysing these approaches, Pracht (2023) considers that the most advantageous is the Process approach, as it covers the most criteria of employee development, such as raising loyalty and motivation, the possibility of delegation, and the balance of team forces (in contrast to the goal-oriented approach). The worst approach, according to Pracht (2023), is the Reactive one, as it covers the least number of criteria.

Nevertheless, different approaches can be optimal for different teams and companies and different situations. In certain cases, the System approach might be considered redundant.

4.1 Best Practice on the Personal Development Process for Quality Management System

After analysing different literature sources, such as Falcone (2013), Tamkin et al. (1995), Beausaert et al. (2011), and International Organization for Standardization (2015), it was concluded that, according to the best practices, the development process involves the following phases:

- preparation
- goal setting
- assessment
- action planning
- implementation
- evaluation.

4.1.1 Preparation

The preparation stage is the first step in executing a Personal Development Plan (PDP) in the workplace, according to Beausaert et al. (2011). The first stage in establishing a PDP, according to them, is to make sure that all **stakeholders are aware of its goals**, advantages, and the duties and obligations of each party engaged.

During this phase, it is important to **identify the major participants** in the PDP process. This applies to supervisors, workers, HR experts, and other relevant parties. According to Beausaert et al. (2011), clarification of the roles and responsibilities of each stakeholder is necessary for the success of the PDP process.

The authors also emphasize the importance of the PDP process being supported **by adequate resources**. According to them, to assist the PDP process, resources should always be available. This concerns, for example, training programs, coaching, mentoring, and access to learning materials.

To keep stakeholders within the time limits and ensure the PDP completion on time, Beausaert et al. (2011) recommend the division of tasks into milestones. The authors suggest creating **a schedule** that guarantees the PDP process is finished promptly.

Beausaert et al. (2011) suggest that development processes may vary depending on their purposes: one is designed for professional development, and the other is for certification/selection/accountability (Smith & Tillema, 2001). Beausaert et al. (2011) refer to several authors (e.g., Beck et al., 2005; Bradshaw & Hawk, 1996; Bunker & Leggett, 2004; Lyons & Evans, 1997; Orland-Barak, 2005; Smith & Tillema, 2001) and consider the central role for learning when a PDP is used for development purposes. When a PDP is used for certification, presenting oneself is most important.

4.1.2 Goal Setting

The next step is to set goals for personal and professional development.

Falcone (2013) considers that SMART goals shall be applied in the development process. Figure 7 illustrates the principles of the SMART system.

Figure 7. Illustration of the SMART system of goal setting. (Lowe, 2019).

As can be seen from Figure 7 the SMART system defines goals to be specific, measurable, achievable, relevant, and time bound. This helps employees and managers track progress and measure success.

Falcone (2013) emphasizes that defining goals should be a joint effort between a team leader and an employee. He advises that management should provide guidance and assistance to help the employee achieve their goals and that the employee should be actively involved in creating goals and determining the necessary steps to achieve those goals.

Anderson (2018) concludes that it is necessary to align the business strategy and the people strategy in the company. For such purposes, he proposes to use the tool presented in Figure 8 as an example.

Design Criteria or Strategic Priority	Competencies Required	"A" Positions and Pivot Roles	Talent Needs	Actions (talent management, learning and development)
Provide custom bundles of products and services	• Ability to assess customer needs • Business acumen • Broad product knowledge	Customer account managers	• 25% growth in account managers forecast in 2 years • Gap in coverage of retail accounts	• Identify successors for critical account roles • Create on-demand product training • Develop talent pool for retail accounts • Customer feedback incorporated into performance management

Figure 8. Example of a people strategy analysis according to Anderson (2018).

The process, as presented in Figure 8, shall be logically built from the design criteria through the essential competencies and needs of talent in "A" positions. The purpose of an action plan is to specify the key and unique elements of the human resources strategy and ensure they relate to the business strategy. (Anderson, 2018)

4.1.3 Assessment

Once goals have been set, it is important to evaluate the employee's existing performance levels, skills, and knowledge to determine areas that could be developed. This can be achieved through self-evaluation, comments from supervisors and co-workers, and official assessments such as performance reviews or skills evaluations.

The assessment shall include, among others, the consequences of interactions between the development process and other processes in the company. According to Tamkin et al. (1995), without knowing how PDPs might interact with other processes already in use, a PDP scheme should not be created. This provides a clear understanding that all processes in the company shall be linked to each other and to the strategy of the company.

4.1.4 Action Planning

Based on the assessment, an action plan outlining the measures necessary to accomplish development goals should be written. This plan should include specific actions, deadlines, and materials needed to achieve the objectives, as well as any possible obstacles and solutions for removing them.

Tamkin et al. (1995) consider that the PDP process should be integrated with the performance management process, with the individual's development objectives reflected in their performance targets and evaluations.

The PDP process, following Beausaert et al. (2011), should recognize an employee's strengths and to be built on them and provide an opportunity to improve their weaknesses. Covey (2004) suggests using SWOT analysis for this purpose.

Beausaert et al. (2011) emphasize that, from the company perspective, the PDP should be aligned with business goals and objectives. This guarantees that the development plans for the staff are directed toward accomplishing the strategic goals of the company.

4.1.5 Implementation

Based on the action plan, the employee should take steps to gain the skills and knowledge required to meet their goals. Implementation can be supported by attending training sessions, working on particular projects, asking supervisors and colleagues for feedback and coaching, and engaging in self-directed learning.

Falcone (2015) and Tamkin et al. (1995) also advise the use of a variety of development methods, considering that they should include both formal and informal learning, such as training courses, job shadowing, coaching, mentoring, and work experience.

4.1.6 Evaluation

In the final step, the effectiveness of the PDP should be evaluated to determine whether the settled goals of development were achieved and whether the PDP was successful.

Falcone (2013) recommends providing regular feedback from managers, which helps employees to understand how close they are to PDP goals. This helps to maintain motivation and goal-focused attention.

International Organization for Standardization (2015) prescribes a checklist to ensure that all the requirements of the standard have been addressed during the development process.

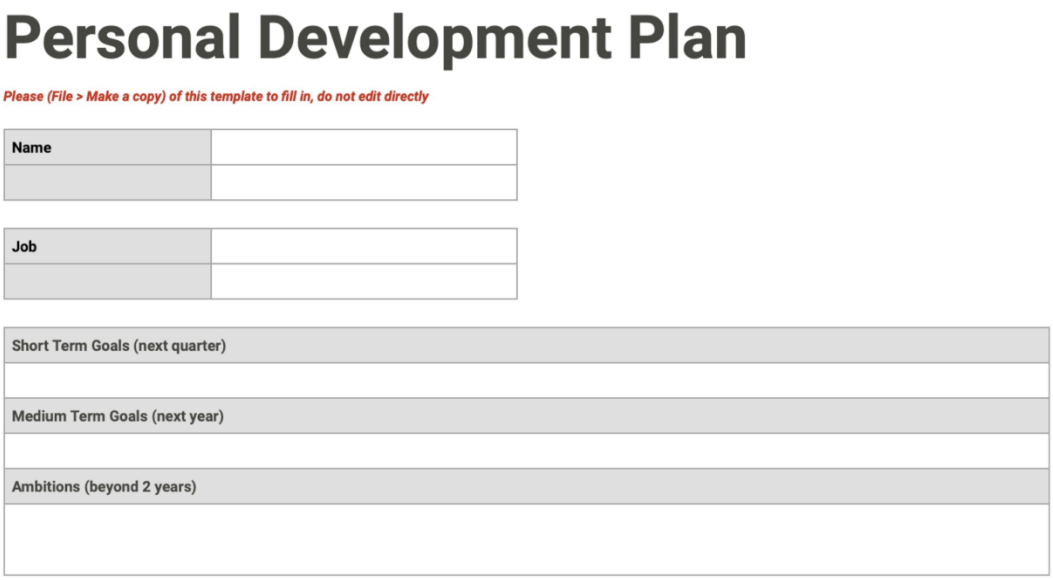
Different authors and Internet resources advise the following types of evaluation: self-assessment, feedback from managers and colleagues, and formal evaluations, such as performance appraisals or 360-degree feedback. Beausaert et al. (2011) recommend reviewing and updating PDPs regularly, either quarterly or annually. This ensures that the employee's development goals remain relevant and aligned with the organization's business objectives.

Pracht (2023) suggests the following checklist to examine the development process:

- The process of system development includes different elements such as procedures, ceremonies, artifacts, decision-making schemes, and logical relationships.
- The influence of the personal factor of the leader is reduced by involving other participants in meetings and having the leader who is also developing within the same system process.
- The process is managed by assigning a responsible person.
- A tool and a process are implemented for monitoring and tracking the employee progress.
- Feedback is collected and analyzed.
- Employee motivation is monitored and regulated.

4.1.7 Visualisation

Contemporary software allows the creation and visualization of personal development templates in various forms. The ordinary template, created in Microsoft Office, was used by most HR specialists in previous years and is presented in Figure 9.



Personal Development Plan

Please (File > Make a copy) of this template to fill in, do not edit directly

Name	

Job	

Short Term Goals (next quarter)
Medium Term Goals (next year)
Ambitions (beyond 2 years)

Figure 9. Example of a PDP template from TechLeadConf (2021).

Such personal development plan presentation, as shown in Figure 9, gives only limited information about supposed development and does not provide any additional description considering the goal achieving measures or predefined milestones.

Nowadays, software technology enables the creation of more visually appealing and user-friendly templates, which can be presented as a Roadmap. An example of such a roadmap, developed using the Internet resource Miro, is shown in Figure 10.

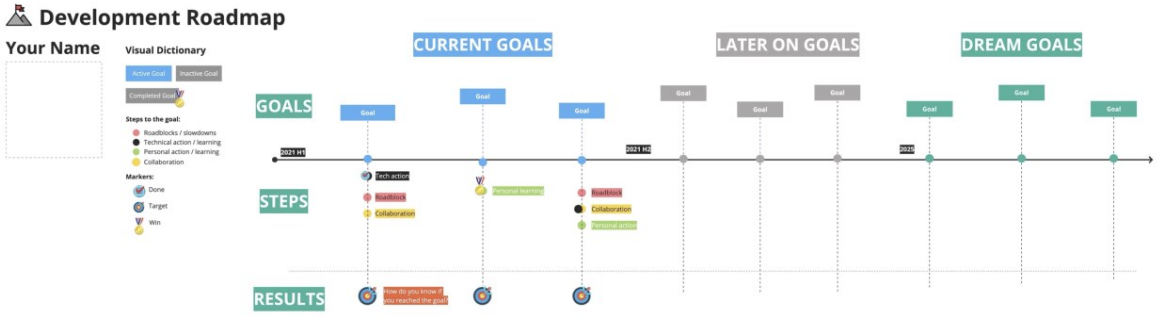


Figure 10. Example of development Roadmap from TechLeadConf (2021).

The way, personal development plan presented in Figure 10, is utilised more in IT companies, but the main ideas can be used for engineering organisations as well.

TechLeadConf (2021) proposed to visualise also the process of the Roadmap implementation (see Figure 11) to simplify the cooperation between supervisor and employee and improve the negotiation results.

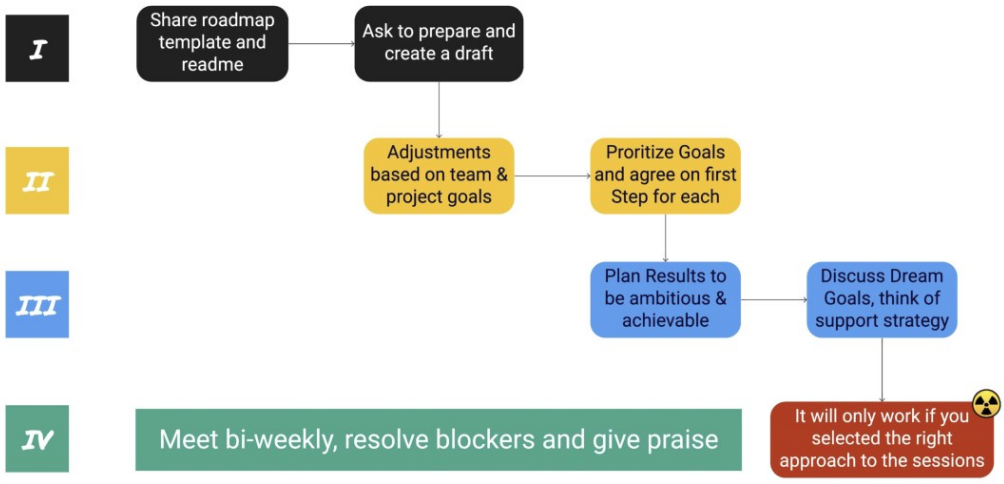


Figure 11. Roadmap implementation process TechLeadConf (2021).

Figure 11 depicts several stages of the personal development plan implementation, that can be provided to supervisors as a short instruction for

further actions. The presented structure is only a shortcut from the general procedure and cannot be used as such.

Among other software resources for personal development plan visualisation can be listed Adobe InDesign, CompetencyCore, Lucidspark, Visio, and others. The choice of software depends on personal preferences and the specific requirements for the PDP template.

4.2 Best Practice on the Creation of a Competence Map

A competency model is a logical execution of competency elements and functions. The competency model contains a detailed description of the norms of behavior of a person holding a specific position, leading to the achievement of official goals. (Gridin, 2013).

The competence procedure shall be developed to assist in meeting the requirements of Clauses 5.3, 7.1.2, 7.2, and 7.3 of the International Organization for Standardization (2015). A competence map serves as a tool for supporting the Human Resources Manager and Line Managers in managing, implementing, and evaluating training. Every workplace should have a suitable matrix (ISO 9001 help. 2023).

Gridin (2013) describes that the level of detail in a competency model depends on the purposes for which the model is used. The experience of recent years of applying the competency model shows that the set of competencies should be optimal and include only key standards of behavior. The content of the competency model includes, according to Gridin (2013):

- A full set of competencies and behavior indicators.
- Description of the standards of conduct or standards of action leading to the fulfillment of the set tasks and the achievement of goals.
- Levels of competencies (if they are provided and applied).

Different requirements for every position, such as legislative requirements and license requirements (e.g., a radiation user's license, a high-risk work license),

should be considered. Personal development reviews and annual appraisals can then incorporate the training needs. (ISO 9001 help 2023).

The competence map of the company shall be tightly connected with the strategy of the company, as stated by Anderson (2018). He suggests that, in developing a business strategy, organizations should consider the availability of talent. It may be difficult for the organization to find the right talent due to its scarce talent needs. Unless the organization invests in hiring and developing talent to help drive the strategy, the strategy fails. (Anderson 2018)

Additionally, Anderson (2018) discusses how business and strategic initiatives influence the design and implementation of HR management systems. Figure 12 shows these relationships.

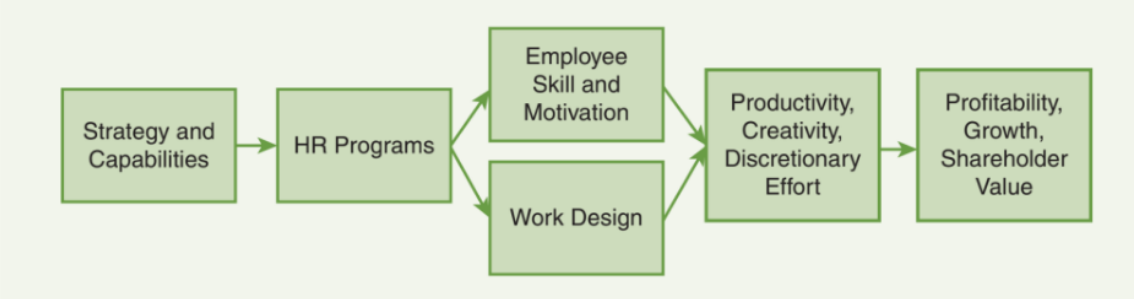


Figure 12. Organisational performance impact of strategic HR. Adopted by Anderson (2018) from Becker and Huselid (1998).

From Figure 12 it can be seen that the first two components affect employee skills and motivation as well as work design, which impacts productivity. Ultimately, profitability, growth, and shareholder value are driven by creativity and discretionary effort.

In order to provide effective implementation and control of quality management systems, satisfy customer expectations, and achieve a high level of customer satisfaction, companies must understand their resource needs and maintain suitable levels of trained and competent people. (Sanghi 2008) suggests that competency models have been developed by many organizations in order to identify the skills, knowledge, and attributes needed for successful performance

in a job aligned with the strategy. Figure 13 illustrates how the development process is linked to the strategic planning of the company.

Figure 13. Linking HR Processes to Organizational Strategy. (Sanghi 2008)

Following Figure 13, the agreed organisation's mission and specified organisation's strategy allow the company to specify the necessary competencies and technical skills of people for the proper performance level. The design and operation of assessment and development procedures guide the organisation to the proper career path and succession planning.

According to Sanghi (2008), the process of developing a competency framework involves four steps. The fifth step can be either a periodic or a change-oriented process.

- Step 1. Define the purpose and performance objectives of a job or position.
- Step 2. Identify the competencies and behaviors that predict and describe superior performance on the job.
- Step 3. Validate selected competencies.

- Step 4. Implement/integrate competencies.
- Step 5. Update competencies. (Sanghi 2008)

Sanghi (2008) divides competencies into three groups based on competencies application:

- Core (organisational)
- Universal /generic /common
- Critical.

The job descriptions can be composed of the following documents, according to Sanghi (2008):

- job descriptions
- union contracts
- departmental planning documents
- performance plans
- appraisal forms.

Gridin (2013) argues that the qualitative content of the model must meet the following criteria:

- Compliance with the strategic goals of the industry. This means that the developed competencies should contribute to core activities.
- Usability for everyone involved in its operation (management, employees).
- The optimal set of model elements, the absence of repetitions, and intersections.
- Measurability of competencies and the system for accounting for expected changes. These factors affect the operating comfort of the model. Having a system for accounting for expected changes allows to obtain the desired range of application of the system and makes the system useful to all participants.
- Simplicity and transparency of the competency model.

As an example of the competency process visualisation Gridin (2013) offers the format-cluster model of competencies, presented in Figure 14.

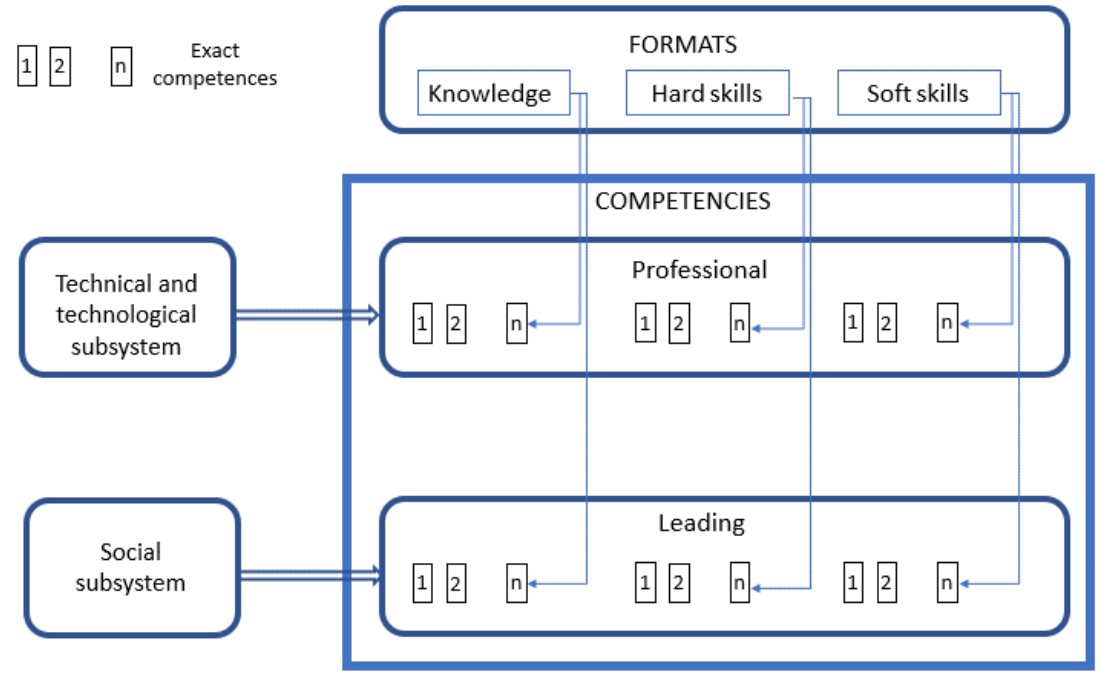


Figure 14. The format-cluster model of competencies. Adopted from Gridin (2013).

The competence map, according to Figure 14 consists of several blocks:

- Description of skills and their levels.
- Description of grades and requirements for skills.
- Description of career path and transition from skill to skill.

The map shall provide flexibility for the company and equalize the employees. (Pracht, 2023)

4.3 Best Practice on the Creation of Development Process Tracking

According to Lowe (2019), a PDP document can't remain unchanged. This is due to PDP being an iterative process that involves introspection, contemplation, and strategic planning for personal growth. As such, it is an ongoing activity that demands frequent reassessment and revision.

To facilitate effective PDP, progress must be tracked consistently and regularly. The frequency of tracking should be determined by established goals and individual agreements. To this end, the utilization of specialized software resources for PDP creation is advocated. The specialized Internet resource for

the creation of development plan software, proposes the following tracking procedures, among others:

- G.O.O.D. performance development review (Goals, Obstacles, Opportunities, and Decisions)
- “Year end” performance review
- mid-year performance review
- 90-day performance review
- peer review
- self-performance review
- team performance review. (Effy, 2022).

When it comes to the principles of the tracking process, Anderson (2018) lists the following rules:

- A performance type must be defined and agreed upon.
- For an organization to be successful, individuals need to be guided from an early stage in their development to develop the skills and knowledge they need to succeed.
- Individuals need to be motivated to perform effectively. Performance-based rewards should be fed into the system.
- Engage the right people. To build commitment, employees should be included in the appraisal system design team.
- Consider performance appraisals as part of a complex system. Process changes could affect other practices, such as rewards, or they might indicate that management training is required.
- Obtain knowledge from the application. Analyse the outcomes of pilot projects and make changes.
- Stay adaptable. As business requirements change, the process should be flexible.
- Have patience. Training, improved communication, or manager support may be required for the implementation of a new system.

According to Pracht (2023), it is important for process tracking to save the goals, decompose them, settle the tasks, and record the progress. HRM (Human resource management) software can be used for this process, or in other cases, Microsoft Word or Excel also suits.

4.4 Conceptual Framework

Based on the findings of the current state analysis conducted in Chapter 3, several weaknesses in the existing development process were discovered. These weaknesses were grouped and assessed, considering the thesis workload and schedule, resulting in the identification of three issues that required further development.

Chapter 4 presented an analysis of best practices for addressing the identified problems. This analysis led to the development of a conceptual framework, as illustrated in Figure 15 and Figure 16.

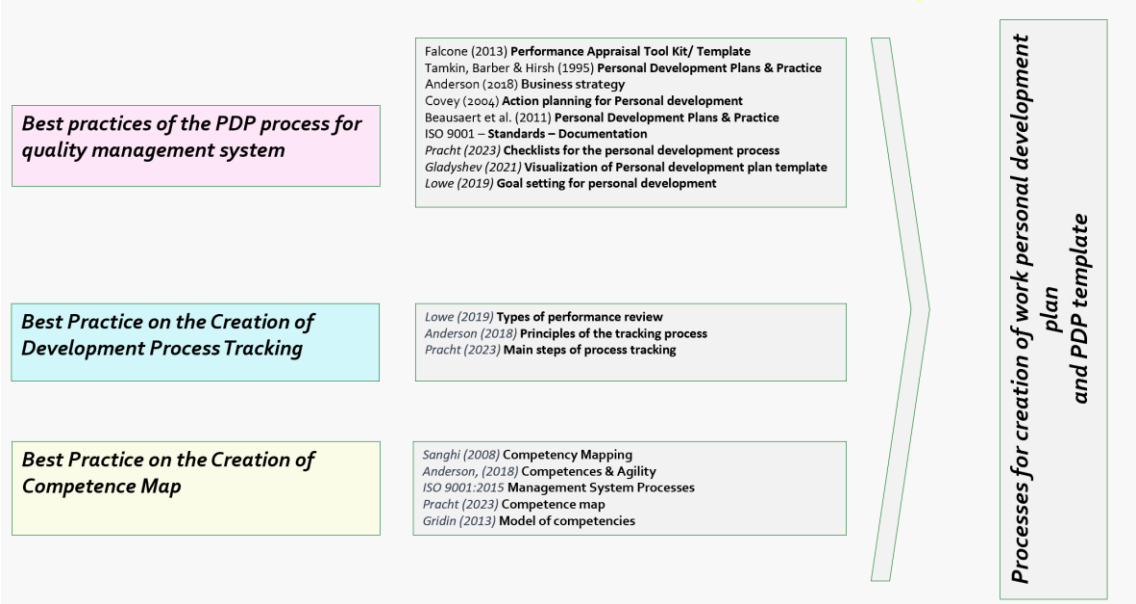


Figure 15. Conceptual framework of the personal development process on a high level.

The framework is presented as a combination of blocks, with "Personal Development Process" and "PDP Template" forming the overarching topic. The next level of the framework consists of the three identified weaknesses, for which literature sources were assigned to provide the necessary information for the subsequent stage of the thesis design. That high level conceptual framework is illustrated in Figure 15.

The processing of findings from presented literature sources facilitated the creation of the next level of blocks, where potential improvement ideas were compiled. The practical level conceptual framework is shown in Figure 16.

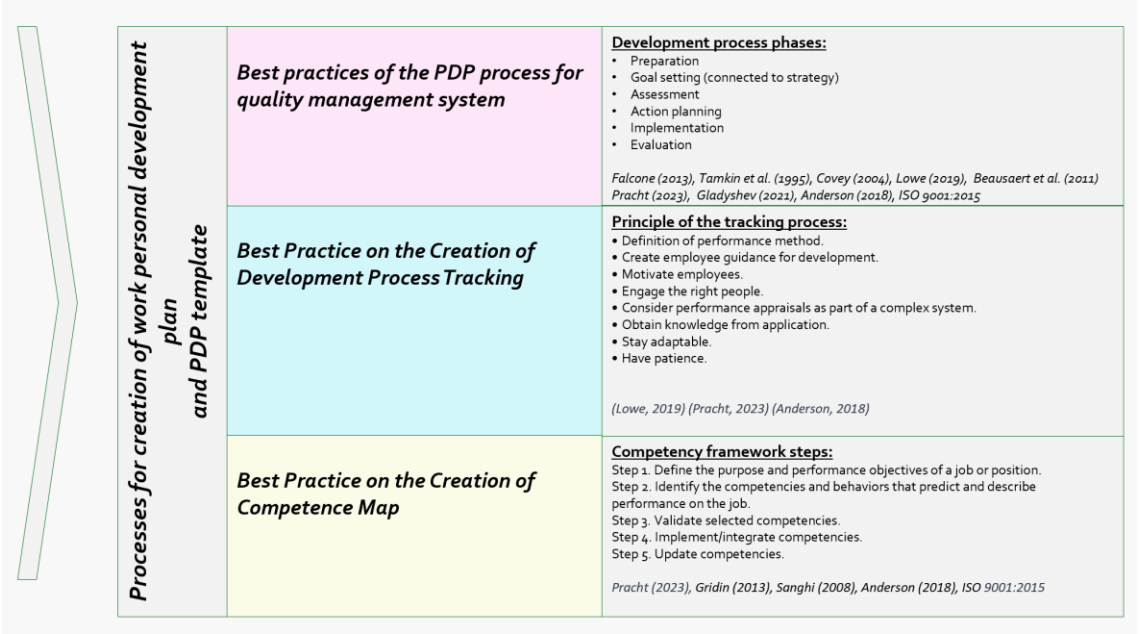


Figure 16. Conceptual Framework - Practical level.

As shown in Figure 16 the initial section called "PDP process best practices for a quality management system," contains a compilation of development process stages with sources from different authors and standards is presented. The slide outlines six development process stages: Preparation, Goal Setting, Assessment, Action Planning, Implementation, and Evaluation.

The next box, "Best Practice on the Creation of Development Process Tracking" presents a comprehensive list of fundamental principles for effective development process tracking. The sources for these principles were identified through an extensive review and analysis of the relevant literature, with Lowe (2019), Pracht (2023), and Anderson (2018) providing meaningful ideas regarding the topic.

The final section "Best Practice on the Creation of Competence Map" provides a list of steps for the development of a competency map. These steps have

been derived from a variety of literature sources, including Pracht (2023), Gridin (2013), Sanghi (2008), Anderson (2018), and the International Organization for Standardization (2015).

Chapter 4 provides a literature analysis of the best practices and improvement ideas for the weaknesses identified in the existing development process of the case company. The outcome of this chapter is presented in the current subchapter as a conceptual framework.

In Chapter 5, the personal development plan and PDP template proposal are presented and developed based on the conceptual framework, literature recommendations, and personal discussions with the management.

5 Design of the Development Process

Chapter 5 provides a detailed description of the design of the personal development process and its essential elements. The first subchapter presents an outline of the creation process, while the second subchapter displays a precise description of the process design stages, derived from the outcomes of the personal discussions and findings from the literature. The creation process is divided into several components that work together to form a consolidated work personal development process. The third subchapter shows an overall draft proposal to address the business challenge.

5.1 Overview of the Development Process Creation

The initial proposal for the work personal development plan was developed by combining information obtained from multiple sources, including a current state analysis, a literature review, and a study of Data 2 gathered through personal discussions with different geotechnical department group leaders.

Three topics were settled for discussion for the proposal draft creation: the development process content, the list of competencies for the map, and the best way to track the development process. The participants shared their ideas regarding the establishment of a proper personal work development process, the content of templates for a personal development plan and competence map, a list of competencies, and the stages of the tracking procedure. The conversations were held in a free-form manner, with the topics proposed as the main discussion lines. To ease the visualization of the current situation and to inspire the generation of ideas, the ad hoc process map and process approaches (Figure 3 and Figure 4) were presented to the conversation participants. The proposals and conclusions were documented during the conversations and collected as field notes. These notes are presented in corresponding tables in the following text.

5.2 Creation of Development Process for the Geotechnical Department

Chapters 3 and 4 have outlined the different components of the work personal development process in the company, including the creation of a competence map and the development tracking process. These elements were found to be lacking in the existing ad hoc process and have been incorporated into the content of this thesis. The following subchapters provide a detailed description of the creation of the development process and its main segments, following the logical structure established in the previous chapters.

5.2.1 Creation of the Development Process and Personal Development Plan Template

The discussions considering the development process creation and its integration into the routine activities of the company brought forth several proposals and ideas listed in Table 4.

Table 4. Ideas and suggestions about the development process and personal development plan template

Source of information	Idea or suggestion	Comments and clarifications
Group Leader 1	The development process shall be connected to the strategy of the company	The growth and success of the company need to synchronize the strategic goals of the organization with the development path of every employee. Such synchronization allows the natural cooperation between employee and the company.
Group Leader 1	The steps of the development process shall be defined clearly together with the worker	It shall be avoided that the development goals and milestones for the employee are defined solely by the supervisor. The employee shall be a co-author of the development plan, which provides better engagement in the process.
Group Leader 2	There shall be the possibility to adjust the goals during the process	To allow the process to be flexible and agile. All parties shall obtain the possibility to rethink the goals if they appear to be inconsistent or irrelevant.
Group Leader 2	The initiative of the employee shall be supported	This condition allows for continuing the good practice of strong mentoring support in the company. But together with this, the connection of the goals of the employee to the strategy shall be kept in mind.
Group Leader 3	The template for the personal development plan shall be better in Excel	Not all group leaders are familiar with different applications for road maps or other managerial tools. It is more convenient and saves time for all if Excel is used.

Three interviewees were asked regarding the development process and its potential structure. The most important feedback came from Group Leader 1, who emphasized the importance of aligning the development process with the

strategic agenda of the company. Currently, the employee development direction is primarily based on individual desires or urgent company needs. However, to achieve organic growth, it is crucial to adjust both the company's and employee's development direction for maximum impact.

Nevertheless, the preferences of the workers shall be considered throughout the development process to keep them engaged and motivated.

The second respondent suggested the possibility of goals adjustment during the process. Depending on the development plan cycle, both parties should acquire the opportunity to modify or cancel goals if circumstances change. This adjustment can be made during milestone meetings or other agreed-upon times.

The other connected comment was made regarding the support of the initiative of the employee. Although the development process of the employee shall align with the main goals of the company, the strong existing position in development support shall be continued in the future. All initiatives should be considered, and suitable ones implemented whenever possible.

The third interviewee suggested using an Excel template for the development plan, as it is a commonly used application for personnel and does not require additional training. Although Miro software was discussed as an option, it was decided to postpone integration due to the reasons mentioned above.

5.2.2 Creation of the Process for Competence Map Design and Competence Map Template

Another point of discussion with the Group Leaders was the approach to the creation of the process for the competence map design and competence map template. The recommendations and suggestions provided by the Group Leaders have been summarized in Table 5.

Table 5. Ideas and suggestions about the creation of the process for competence map design and competence map template.

Source of information	Idea or suggestion	Comments and clarifications
Group Leader 1	The competence map shall be connected to development areas described in strategy plans	The whole process shall be consistent, and the list of competencies shall be dictated by the strategic goals of the company.
Group Leader 1	Strategical plans shall determine the development direction for employees	The development of each group member shall be connected with the main development line of the company.
Group Leader 2	It is important to invent assessment grades that are convenient to use	As long as the group leaders are same time designing engineers, the duration of the assessment shall be minimized. Therefore, the assessment grades shall be simple and fast to apply.

The most significant suggestion concerning the creation of the competence map was its alignment with the company's strategy and development areas, described in the strategic plans. Depending on the main goals of the development of the company, the competencies of the employees shall be adjusted and fulfilled.

In line with this, it was emphasized by Group Leader 1 that the development of every employee shall be aligned with the main objectives of the company. This alignment ensures that all employees are working towards the same goals.

Group Leader 2 proposed a simple grading system for competencies that does not require a complicated assessment procedure and is less dependent on the personal attitude of the supervisor. This system aims to establish clear and consistent criteria for evaluating competencies and promoting equitable development opportunities for all employees.

5.2.3 Creation of the Process of Development Tracking

The creation of the process of development tracking was the third topic for discussion with the group leaders. The main proposals are outlined in Table 6.

The creation of an effective tracking process is a critical component of the employee development process, as it enables the company to measure progress and identify areas for adjustments.

Table 6. Ideas and suggestions about the creation of the process of development tracking.

Source of information	Idea or suggestion	Comments and clarifications
Group Leader 1	There shall be the possibility to involve team members who are mentoring or supervising	If an employee is working with different group leaders or has varying development goals with several mentors or supervisors for each goal, it's crucial to involve every responsible person in the development process tracking. This ensures that the best feedback is provided, and necessary corrections and root-cause analyses can be conducted.
Group Leader 2	The tracking shall be done as often as many milestones are assigned	The development process should be divided into an adequate number of milestones for optimal tracking and monitoring.

Group Leader 1 suggested the necessity of involving all engaged supervisors in the assessment process of the employee. In situations where an employee is working with multiple group leaders or implements development goals that involve several mentors or supervisors, it is essential to ensure that all responsible parties are involved in the development tracking process. This involvement enables each party to provide valuable feedback, make necessary corrections, and conduct root-cause analyses if required. By including all relevant individuals in the development tracking process, the company can

ensure that each employee receives comprehensive support and guidance throughout their development journey. Additionally, this approach can promote consistency in feedback and evaluation, minimize miscommunication, and help avoid potential conflicts between supervisors or mentors.

During the discussion, Group Leader 2 proposed to divide the development process into an appropriate number of milestones to ensure effective development progress and accurate tracking. This approach allows for a clear understanding of the progress made towards each development goal and provides an opportunity for the necessary adjustments to be made if required. A well-defined and structured development process with clearly outlined milestones can help ensure that development goals are achieved within the desired timeframe and with maximum efficiency.

5.3 Draft Proposal of the Development Process and Template for Personal Development Plan

Based on the findings described in previous subchapters and conceptual framework solutions, the draft of the personal development process was designed and presented in Figure 17.

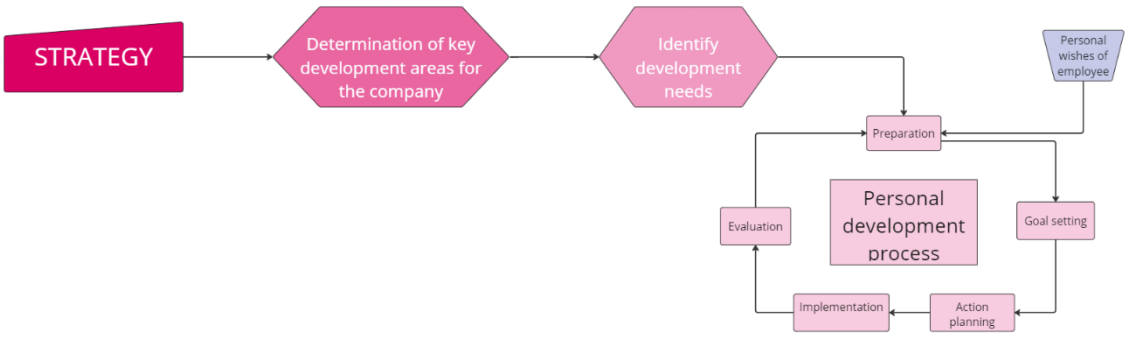


Figure 17. Draft proposal of the core work personal development process for the Geotechnical department.

As it was determined during the personal conversation with the group leader in subchapter 5.2.1, the primary objective of creating an official development process is to align it with the company's strategic goals. All development

procedures must be driven by the company's strategic needs and objectives, and the key development areas must be identified to reflect strategic decisions. Subsequently, the development needs must be determined to establish the direction of action, as it is shown in Figure 17. This identification of needs initiates a circular development process, which comprises the following steps:

1. Preparation: The first step involves the management of the company, the supervisor, and the employee preparing for the development process. The management must identify the need for development based on strategic goals, designate a suitable person to address the company's needs, and participate in future development. The designated employee must understand the future activities and the suitability of their assigned role to perform these activities. The personal preferences of the employee must be considered in this step since the successful implementation of the development process depends on their acceptance of the new role and responsibilities.
2. Goal setting: Once the preparation step is agreed upon and the parties have defined the development criteria, the goal setting stage shall be started. The initial development goal intended by the company can be subdivided into smaller goals and formulated properly.
3. Action planning: After setting the goals, the plan for further actions shall be developed. The possible training or studies shall be determined, and possible mentors shall be assigned.
4. Implementation: This stage is dedicated to executing the development actions determined, settled, and planned in the previous stages of the process. The success of this stage depends on the quality of the preceding planning.
5. Evaluation: The evaluation stage is critical for the procedure of following process implementation and allows for the possibility to perform the correction measures in time.

The stage of **goal setting** is divided into several steps, which lead to the filling out of the Personal development plan template. The division is illustrated in Figure 18.

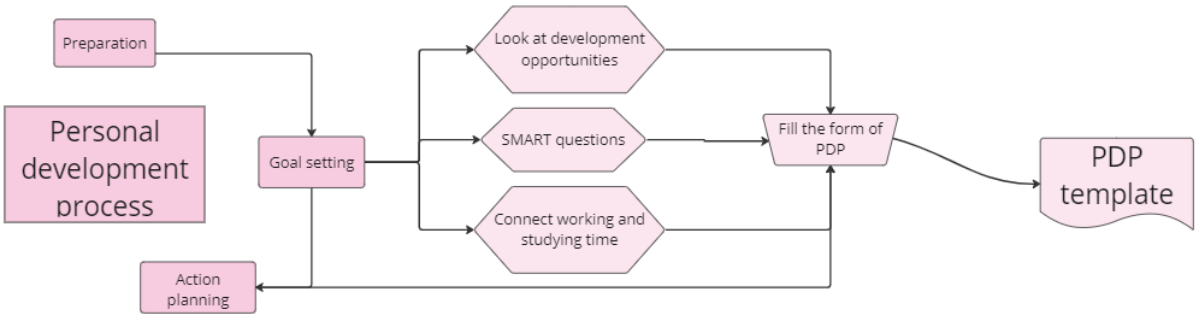


Figure 18. Goal setting stage.

Figure 18 illustrates the involvement of an integral aspect of the goal-setting stage for defining parameters that ensure that the development objectives can be attained within a specified time frame. At this stage, development opportunities shall be carefully evaluated and processed to identify the appropriate targets. Since all employees are full-time workers, the balance between working and studying time shall be discussed and determined. The company can provide free days, assigned for education, or reduce the total workload during the educational period to enable workers to acquire the necessary knowledge. The culmination of these actions leads to the composition of a **personal development plan**, which serves as the primary document for development tracking.

The Personal Development Plan (PDP) template was created using Microsoft Excel, as it was advised by the majority of group leaders. A copy of the PDP template can be found in Figure 19.

Personal development plan

Employee name:	
Supervisor name:	
Date of initiation	

CURRENT GOALS

		Goal 1	Goal 2	Goal 3	Goal n
GOALS					
Timeframe					
STEPS	Which courses/trainings shall be passed				
	What are slowdowns/complications				
	Who can assist/help/teach/guide				
	Personal actions				
RESULTS	What is the result, formulated by SMART principles				

Milestone review date 1							
Review results:		planned					
		achieved					
Milestone review date 2							
Review results:		planned					
		achieved					
Milestone review date n							
Review results:		planned					
		achieved					

FUTURE GOALS

Goal 1	Goal 2	Goal 3	Goal n

Figure 19. Proposal for Personal development plan template.

The template contains information regarding the names of employees and supervisors, the date of the development plan initiation and is structured into three primary fields: Goals, Steps, and Results.

The Goals field is developed by previously established procedures and is divided into two sections, such as Current Goals and Future Goals. The Future Goals section may be utilized to provide additional developmental targets to motivate employees when the plan for Current Goals has been achieved. For employees who are uncertain about their developmental direction, only the Current Goals section may be used.

Field ”Steps” shall be determined depending on the identified goals and the following questions shall be addressed:

- Which courses/trainings shall be passed? This enables the designation of necessary actions in advance and facilitates the estimation of development expenditures.
- What are slowdowns/complications? This necessitates the involvement of the supervisor, who can help to ease the development process for the employee and solve the possible complications. For example, the supervisor may need to secure funding for the employee's training or arrange a schedule for studying during work hours.
- Who can assist/help/teach/guide? The primary approach to address additional training or educational needs shall involve exploring internal opportunities within the organization. It shall be decided if a person inside the organisation exists who can offer advice or provide complete instruction on the selected goal. It might be challenging to convince another worker to devote work time towards teaching, therefore corresponding measures shall be implemented. Either decreasing the working load for such a mentor or developing a scheme whereby the mentor and trainee collaborate in a pair and the trainee assumes responsibilities gradually.
- Personal actions. Here shall be outlined the specific tasks and responsibilities that the employee is required to perform independently. For example, such activities as studying software, planning calculation procedures, or undertaking other relevant tasks.

The content for the field “Results” shall be formulated clearly and in accordance with the SMART principles. The more exactly the results are formulated; the better performance outcome can be expected.

The template, presented in Figure 19, incorporates a schedule for tracking milestones, with the number of milestones to be determined based on the complexity and scope of the identified goals. The milestone process serves to break down the larger goal into smaller, more manageable events, enabling easier tracking and adjustment. The field should include information concerning both planned and achieved results to see the correspondence between the chosen development speed and the real opportunities of the employee.

The evaluation stage of the development process is composed of two steps, as illustrated in Figure 20. The first step involves goal adjustment, which allows for modification of the plan's content or schedule to enhance achievability and time sensitivity, as deemed necessary. The second step, process tracking, is intended to facilitate continuous monitoring of the plan's performance against established objectives, with the assignment of milestones serving as a guide for follow-up meetings. During the data collection stage, Group Leader 2 recommended tracking conversations to be held more frequently at the initial stages of the process implementation, gradually reducing the frequency as the plan becomes a routine activity.

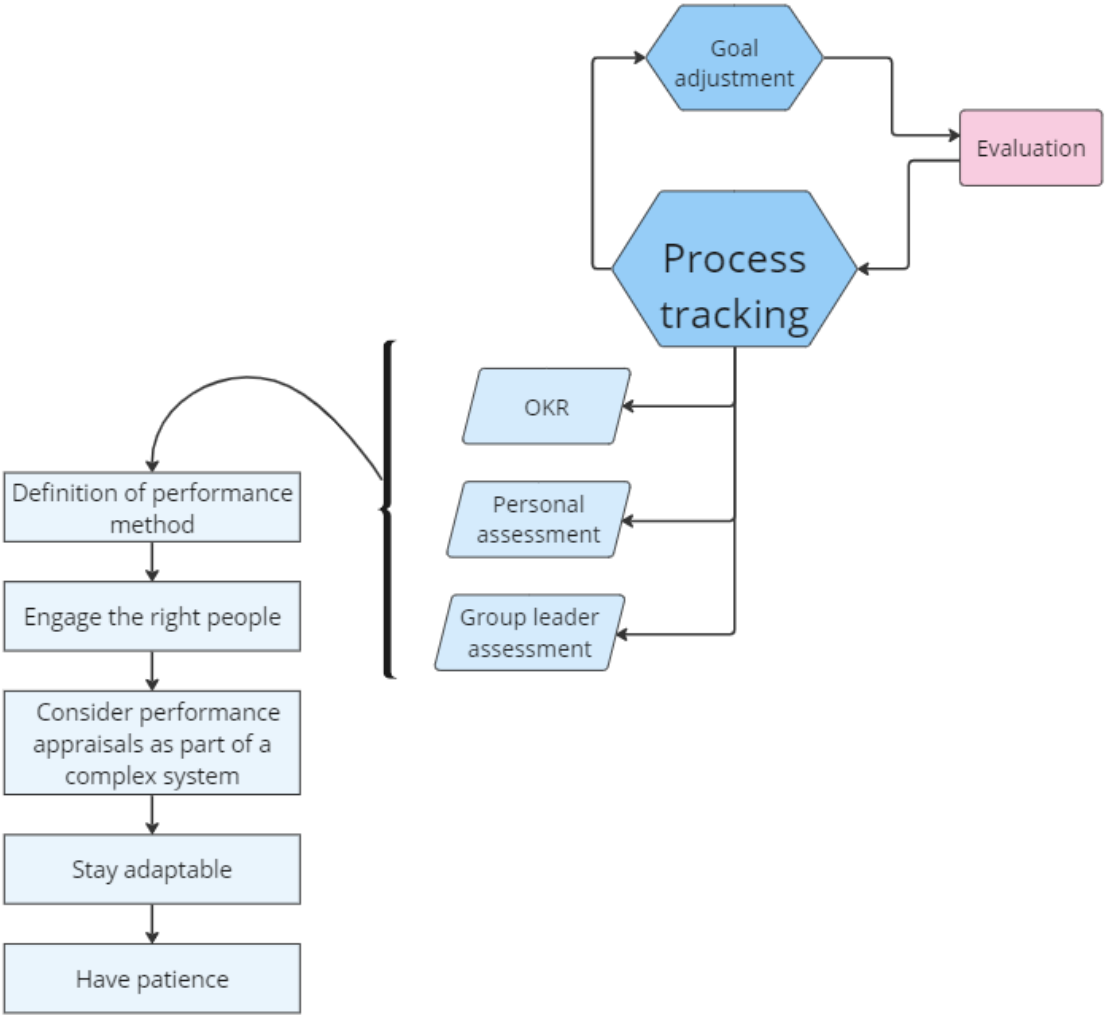


Figure 20. Draft proposal of personal development process tracking.

To ensure effective process tracking, several possible procedures were identified during the literature review stage and presented in Figure 20. From these, three procedures - Objectives and Key Results (OKR), personal assessment, and group leader assessment - were selected for further implementation during Data 2 conversations. The other procedures distinguished during the literature assessment were either considered too extensive or were integrated into these three procedures mentioned above.

Once a procedure has been chosen, the subsequent steps for process tracking are outlined in Figure 20. These steps serve as a guide for effective and structured monitoring of the personal development plan's progress.

The three compulsory steps of the tracking process include the definition of performance method (out of the three mentioned above or any other considered more suitable for the situation), engaging the correct people in the process (all mentors or supervisors involved in the development procedure) and consideration of the performance appraisals as part of a complex system (taking into account all circumstances, resulting from strategic decisions made at the company level).

The creation of a competence map is an integral part of the personal development process It is an iterative process that is heavily reliant on the strategy of the company.

The process of creating a competence map is illustrated in Figure 21.

Not every deficiency in competencies needs to be immediately resolved. To make the decision, the management must consider the strategic direction of the company, its actual needs, and the desires of the employee, as revealed during personal development conversations. Further actions shall be taken based on a comprehensive analysis of the competence map, which should be aligned with the activities of the department and the company. Figure 21 demonstrates the connection between the competence map and the identification of the development needs of the company.

The first step in creating a competence map is to define the job's purpose. Since different departments follow diverse skill descriptions, the appropriate description should be determined at the beginning of the process. The next step is to identify the required competencies. Geotechnical engineering tasks vary significantly and require various skills and competencies. The development of engineering software and the implementation of 3D practices require regular follow-ups on the latest trends and regular personnel training.

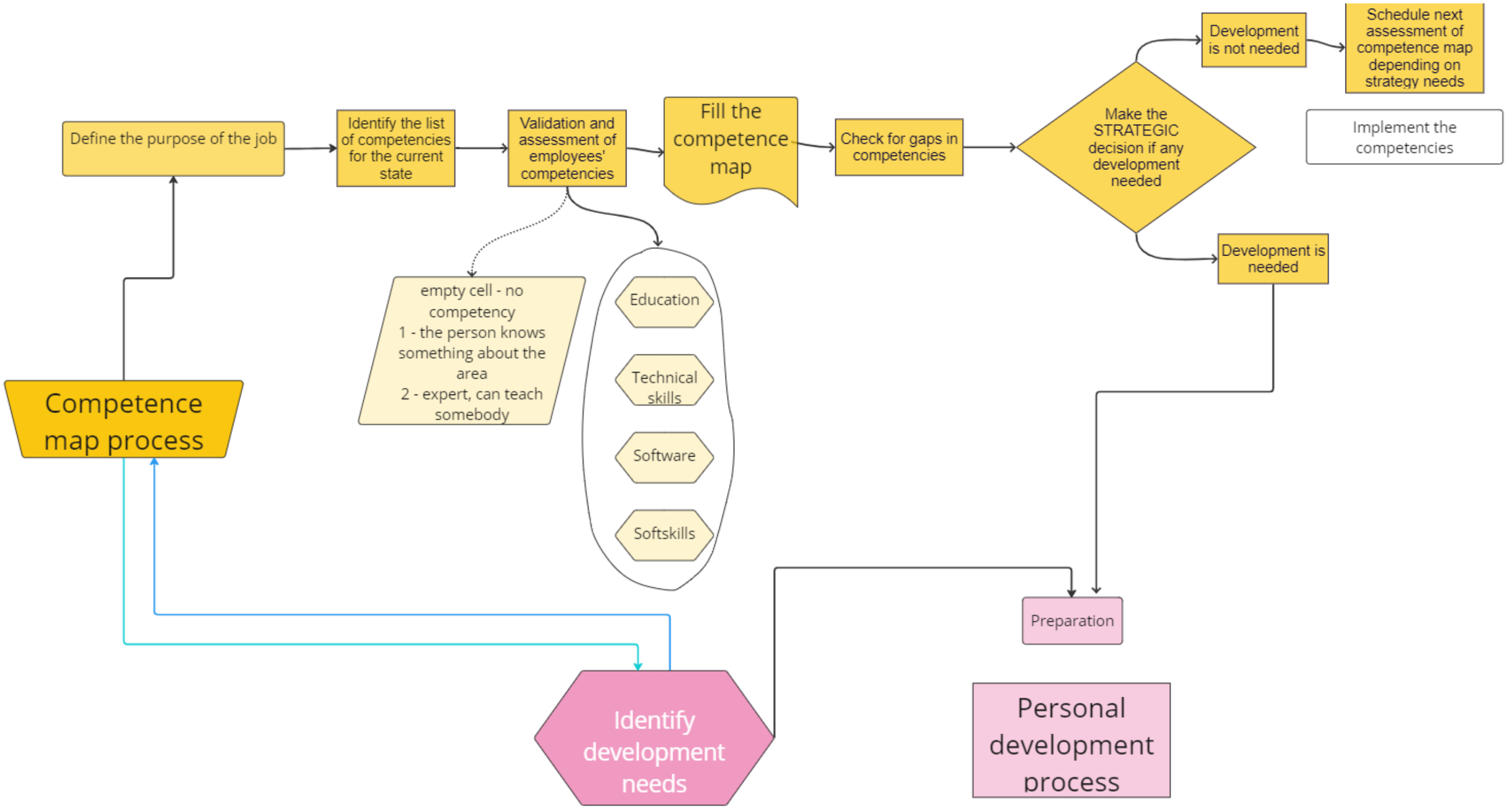


Figure 21. Draft of the process of competence map creation.

Figure 21 presents that after competencies have been identified, they should be categorized by type. In the case of design work scope, four categories have been distinguished: education (to determine the level of possible additional learning), technical skills (engineering skills), software, and soft skills.

One of the most important steps of the process is to validate the proficiency level of every employee. To minimize the number of categories, facilitate gradation, and reduce personal influence, it was decided to use three grades. An empty cell in the template indicates the absence of competence, grade 1 denotes some knowledge of the considered item, and grade 2 can be assigned to employees with high-level skills who can teach others.

The next step involves filling out the competence map according to the developed template, making it easier to identify competence gaps. When all employees are assessed for all competencies, the following weaknesses in the workforce may become evident:

- Insufficient coverage of certain competencies by trained personnel, leading to the risk of task failure or key personnel burnout in case of a heavy workload or the illness of key employees.
- Monopolization of a particular competence by only one employee, leading to the risk of job failure in case of that employee's sickness or vacation time.
- An employee possessing an insignificant set of competencies, leading to a loss of motivation for everyday work and the possibility of the employee leaving the company due to a prolonged period of stagnation.

In the final step of the process, the strategic decision shall be made regarding whether the identified weaknesses require action. If the strategy does not consider the identified weak skill necessary for further development, it can be scheduled for consideration during the next assessment. On the other hand, if the strategic goals determine that a defined gap in competencies is critical for the progress of the company, that competence must be included in the development procedure and considered for a suitable employee during the preparation stage of the personal development process.

Following the steps mentioned above, the first draft of the competence map template was created to be presented at the evaluation workshop. The template is displayed in Figure 22 and includes the list of competencies, added by the author of the thesis for further discussion during the validation workshop, with the possibility of continuous editing and adjustment.

The first competence map should be prepared for the annual management meeting by each group leader for their respective group members. The assessment of the employees should be conducted by the group leaders prior to the meeting, involving other mentors if necessary. During the annual management meeting, the assessments for all employees in the Geotechnical department should be combined into one map to reveal any competence gaps. After identifying strategic goals and development needs, the competence map should be reassessed if necessary.

Description	Skills	Geotechnical department										
		ENGINEERS										
												Highest Rating
		Current	Goal'23	Current	Goal'23	Current	Goal'23	Current	Goal'23	Current	Goal'23	
Education and competencies	FISE											
	AMK											0
	YAMK											0
	DI											0
Technical	Rock mechanical engineering											
	Stability calculations											0
	Reinforcement design											0
	Soil mechanical engineering											0
	Stability calculations											0
	Reinforcement design											0
	Hulevesi											0
	Vertical planning											0
	Site drainage											0
	Retaining walls calculation											0
	Structural design											0
	Design supervision											0
	Excavation and blasting design											0
												0
												0
												0
Software	Autocad											0
	AutoCad Civil 3D											0
	Building Design Suite											0
	Infrastructure Design Suite											0
	Naviate C3D											0
	MicroStation V8i ja Terra-sovellukset											0
	Revit Structure ja Architecture											0
	Civil 3D											0
	Navisworks											0
	InfraWorks											0
	Solibri MV											0
	IFC Toolbox											0
	AutoDesk ReCap											0
	Faro Scene											0
	Slope											0
	GEOS											0
	GeoCalc											0
												0
												0
	MS Office											0
Soft skills	Communication											0
	Attitude											0
	Time Management											0
	Team Management											0
	Tasks decomposion											0
	Ability to communicate with group leader (understand the tasks, make correct questions)											0

Figure 22. The fragment of the draft template of the competence map.

The draft proposal of the personal development process is depicted in Figure 23. The figure represents three previously described fundamental components of the process. All of them are essential and must be regarded with equal importance.

The strategy of the company defines the main direction of work personal development, while the competence map provides an understanding if all the required components are available. In the event of any deficiencies in the competencies that prevent the strategical goals to be implemented, they should be identified and included in the work personal development plan to the appropriate person. The development process shall be properly tracked to identify any complications that may arise and to motivate employees to perform better.

From the existing ad hoc process, the positive aspects were identified and subsequently incorporated into the draft proposal to maintain the successful practices already integrated into the operations of the company. These modifications are depicted in the grey boxes within Figure 23.

One set of pre-existing process steps is related to the identification of the development needs while another set is associated with the preparation stage of personal development from the perspective of the employee. The first group describes the behavior of the employee with a high level of responsibility and self-awareness. These employees are engaged in the process of analyzing lessons learned and identifying deficiencies in their knowledge, which leads to an understanding of the necessity of acquiring further internal or external education.

In the existing ad hoc process, decisions regarding the implementation of such education are made based on the availability of budgetary resources, the preferences of the employee, and the immediate needs of the company. In the future, greater emphasis shall be placed on aligning the educational needs of employees with the strategic objectives of the company.

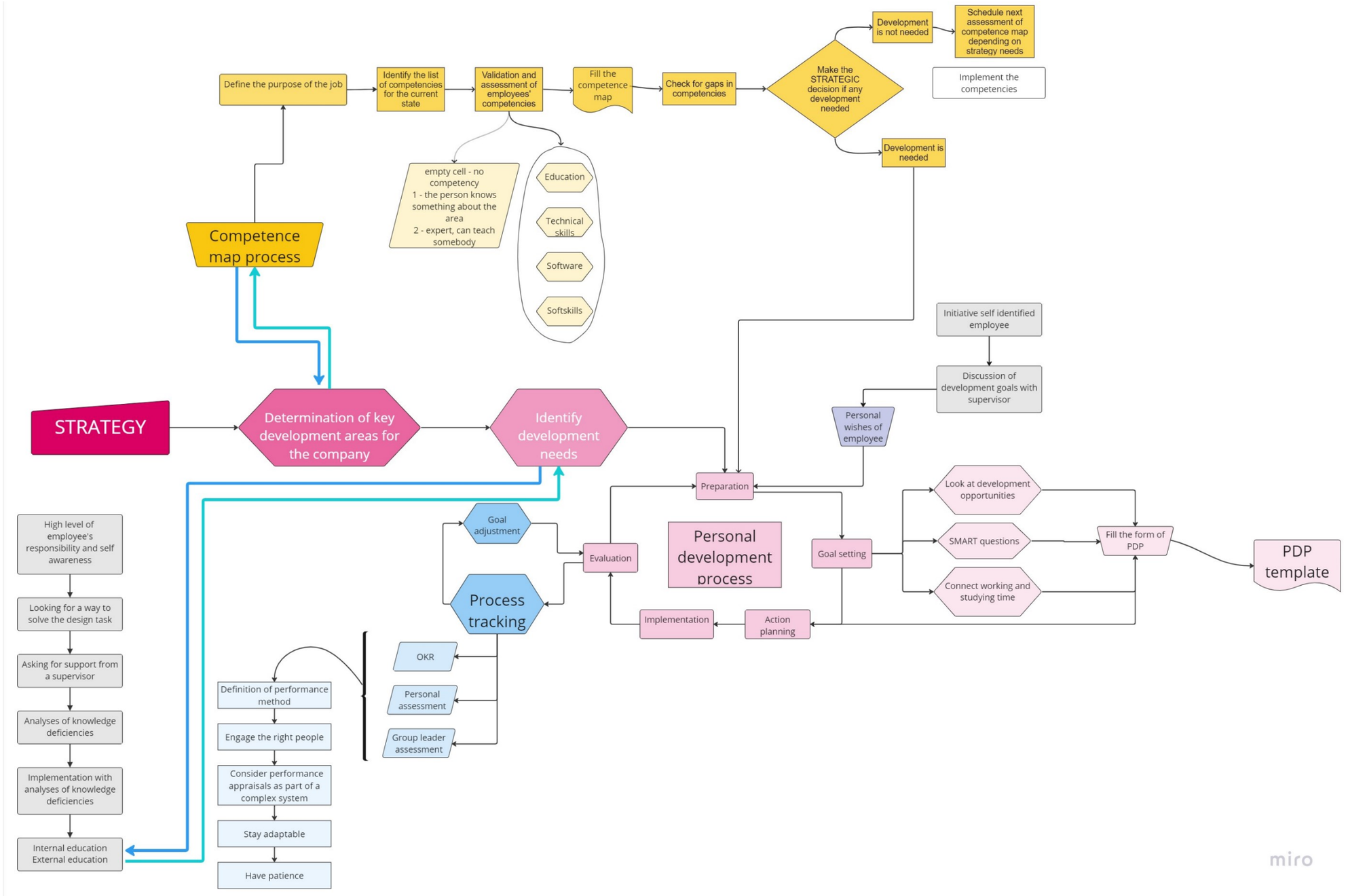


Figure 23. The draft proposal of the personal development process for the Geotechnical department.

Chapter 3 contains an evaluation of the existing ad hoc process, aimed at identifying the primary deficiencies that require further consideration. Based on this evaluation, the main deficiencies were selected for further analysis in subsequent chapters.

Chapter 4 provided an overview of the best practices described in the literature for addressing the identified deficiencies in the existing process. This chapter served to highlight the most effective strategies for improving the personal development process.

Chapter 5 describes the creation of a process for personal development, including development process tracking and the creation of a competence map. These proposals were developed based on literature findings and insights obtained from personal conversations with group leaders, which built the Data 2 information.

Chapter 5 begins with the description of Data 2 collection, which was integral to formulating the core stages of the development process. Subsequently, the chapter describes the tracking process, which can facilitate the monitoring of progress and the identification of areas requiring improvement. The creation of a competence map is described hereon, including the identification and categorization of competencies, as well as the validation of employee proficiency levels.

In this chapter, emphasis is placed on the significance of strategic decision-making, highlighting the dependence of the personal development process on these decisions and the impact of these decisions on the overall success of the company. The proposed process provides a structured framework for personal development, enabling the company to make informed decisions regarding training and development needs.

Chapter 6 focuses on the validation of the proposals presented in Chapter 5 and provides the design of the final proposal, built on the comments provided during the validation workshop, conducted as a part of the Data 3 collection.

6 Update and Validation of the Designed Development Process

Chapter 6 focuses on presenting the outcomes of the validation process and the enhancements made to the initial proposal introduced in Chapter 5. This chapter outlines the proposal validation stage and highlights the feedback received from the group leaders during Data 3 Collection. It also covers the steps taken to improve the proposal and presents the final version of the development process.

6.1 Overview of Validation and Update Stage

The validation procedure involved a workshop that was arranged with the four group leaders of the Geotechnical department, as well as the author of the thesis as the chairman. During the workshop, the draft of the development process was introduced in a presentation. The proposal included the template of the personal development plan, development process tracking, the process of creating the competence map, and the competence map template. These items were subsequently discussed in depth. The agenda included all listed topics, specifically the process weaknesses that were revealed during the current state analyses and were deemed critical for further improvement.

The workshop included several parts, consisting of a presentation of the proposal as the first segment, followed by a discussion and exchange of opinions in the second stage. The final phase provided constructive comments and suggestions to enhance the proposal.

Overall, the group leaders responded positively to the proposed draft and admitted that the suggested improvements would strengthen personnel management and increase performance efficiency. It was especially noted that the presentation revealed previously unseen weaknesses, which were duly recognized.

6.2 Summary of Comments for the Draft Proposal of the Development Process

The comments received regarding the draft proposal for the development process have been summarized in Figure 24. It can be seen that the majority of comments were focused on the process of development progress tracking and the creation of the competence map.

Specifically, there were recommendations to improve the clarity of the steps involved in the competence map creation process, as the initial proposal was deemed overly generic and cannot be easily followed by a person who is unfamiliar with the company. This is especially important in instances where a new supervisor may need to take over the task of creating or updating the competence map.

It was also supposed to supplement the list of validated parameters with the "Experience" row. The description of education without the experience specification does not serve as a sufficient criterion for evaluating the competence of an engineer. In cases where the expert lacks the requisite experience in engineering design projects, the education does not provide the confirmed value.

Furthermore, it was proposed that the sources of the competencies list be specified, as such guidelines would enable users to distinguish the appropriate skills for engineering tasks.

The template for the Competence map was recommended to add with the gradation of FISE classes and provide as a drop-down list in the Excel template, as it would help the offering process. To simplify the assessment of education, it was proposed that all education-related options be combined into a single row and presented in the form of a drop-down list. This would facilitate the offering procedure, where the type of education attained by the expert is a significant factor.

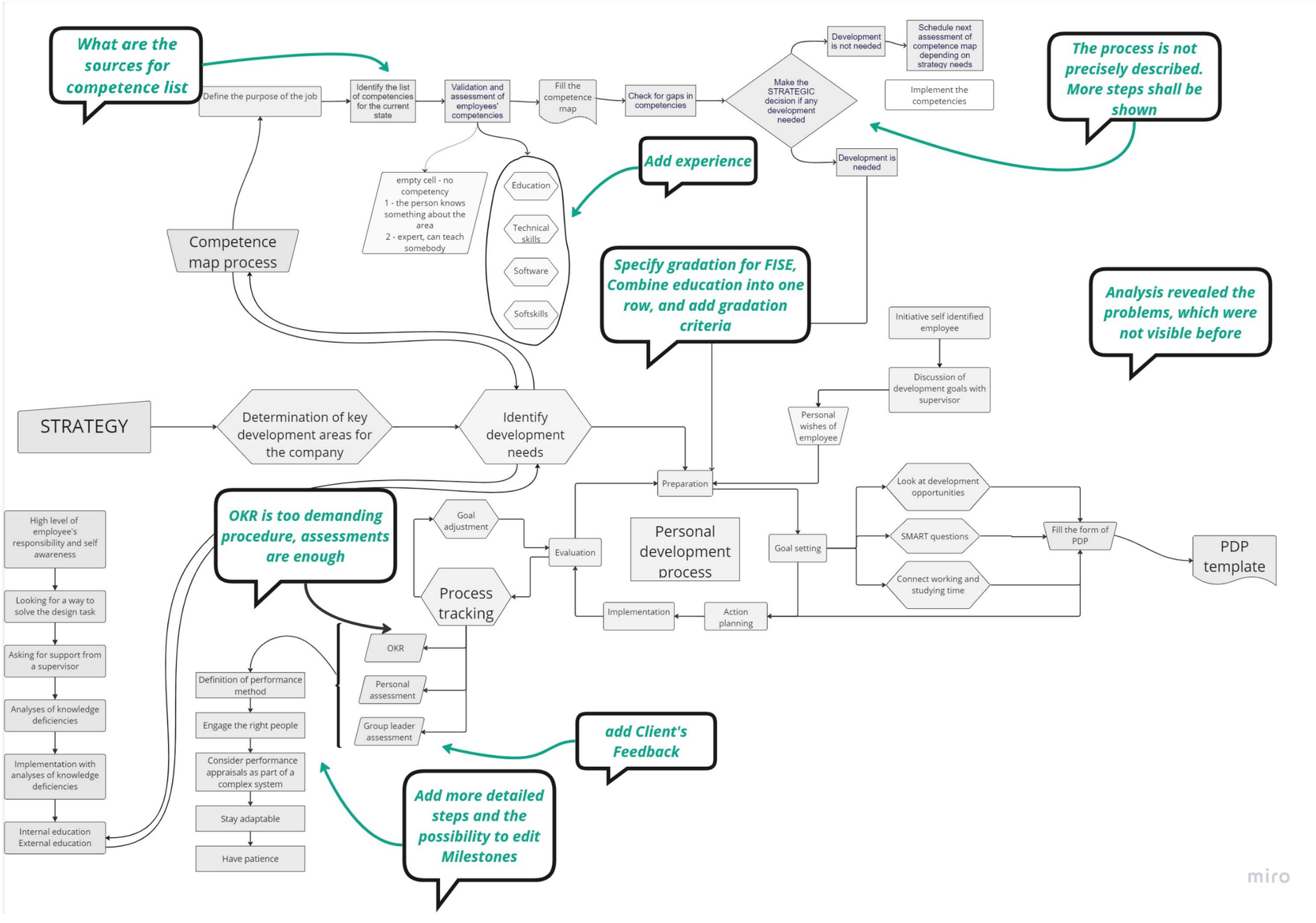


Figure 24. Comments for the draft proposal of the work personal development plan.

As Figure 24 shows, the tracking procedure received several comments. One suggestion was to enhance the clarity of the process by providing a more detailed description of the tracking steps.

With regards to the OKR procedure, it was admitted as being overly demanding and requiring specialized knowledge and explanation to management. It was proposed to proceed with only personal and group leader assessments and include feedback from the client in special cases when the employee was closely involved in the relationship with the customer.

6.3 Updates for the Draft Proposal of the Development Process

The updates performed for all components of the development process are described in the following subchapters.

6.3.1 Update of the Proposal for the Development Process and Personal Development Plan Template

At the validation workshop, no comments were made regarding the core development process, which means that this aspect of the overall process was accepted.

6.3.2 Update of the proposal for Process of Competence Map Design and Competence Map Template

The draft version of the process for the creation of the competence map received several comments related to both content and structure. Therefore, the process was updated in line with the feedback provided.

The first step of the updated competence map creation process is reflected in Figure 25.

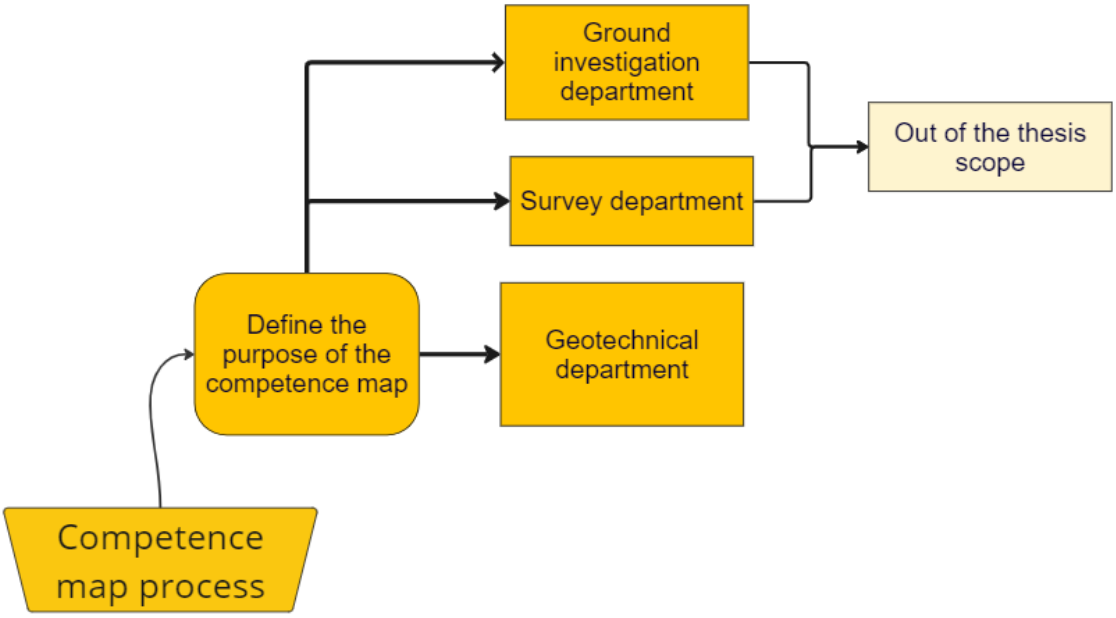


Figure 25. The first step of the updated competence map creation process.

To address the comments received, the first step of the process was revised to provide more detailed instructions for the reader. Additionally, Figure 25 depicts the inclusion of three departments into the scheme. The process was modified to incorporate three different options from which to choose. In previous chapters, it was described that the scope of this thesis covers only the Geotechnical department and this limitation.

The next step of the process is depicted in Figure 26.

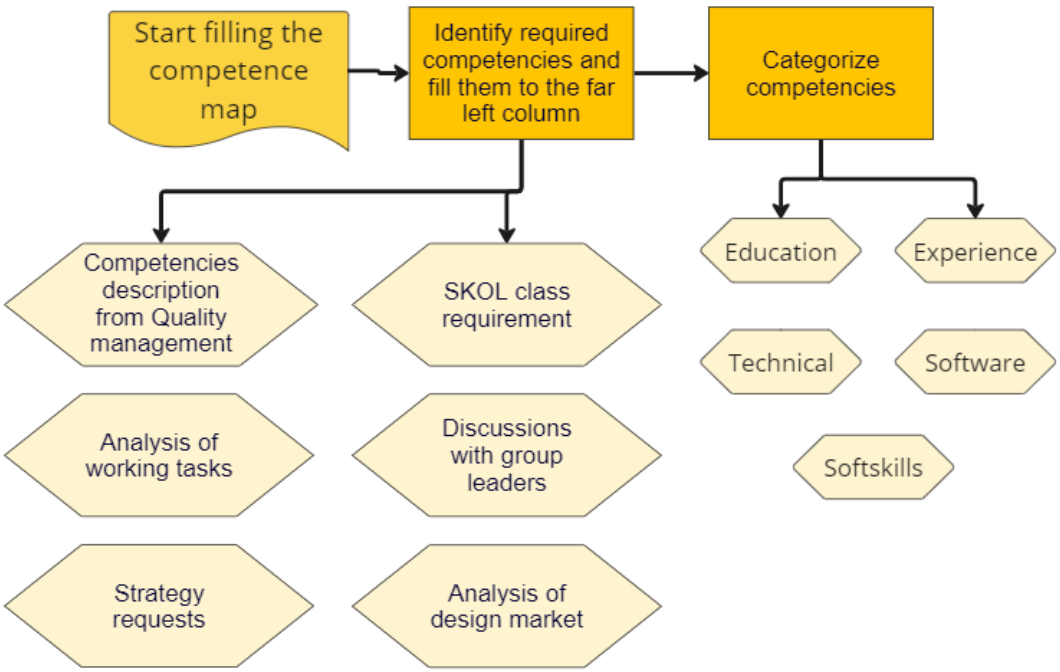


Figure 26. The next step of the updated competence map creation process.

According to Figure 26, after the scope of the competence map has been identified, the Excel table for the competence map template can be created. The need to provide a list of sources for the competencies as a guideline for the user was commented during the validation workshop. The sources for the list of competencies may include recommendations from SKOL, descriptions of competencies derived from Quality Management, analysis of working tasks, discussions with group leaders, analysis of the design market, and, perhaps most importantly, the strategy request. This linkage serves to connect the competence map with the personal development process of workers, as well as with the strategic goals that are the source of the company's developmental direction.

Experience as a category for the competencies was added to the scheme as the response for the other obtained comment.

In response to feedback received during the evaluation workshop, the subsequent steps of the process were revised to provide more detailed instructions as illustrated in Figure 27.

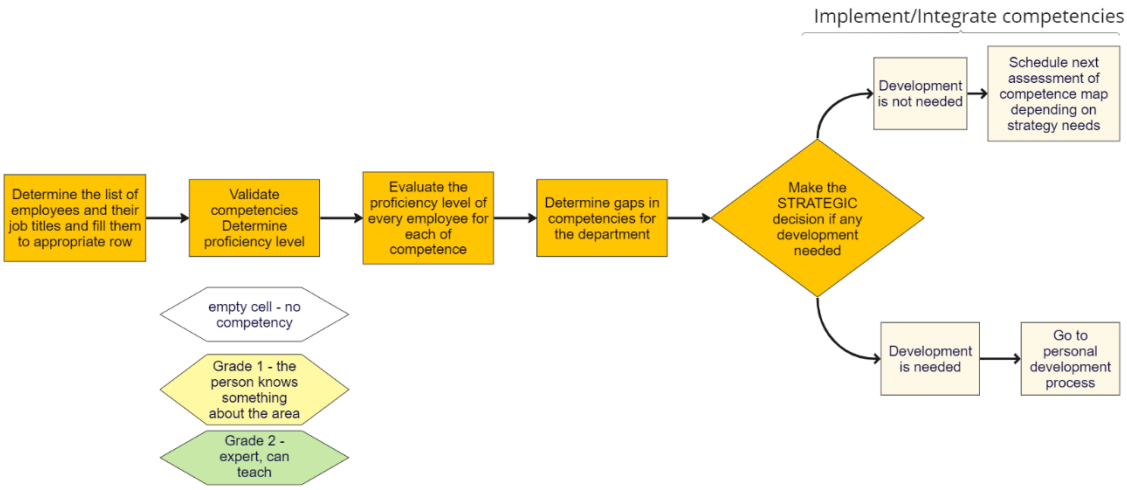


Figure 27. The final steps of the updated competence map creation process.

The required content of each category of competence varies for different job positions therefore the next step of the process is to determine the list of employees and their job titles. The next updated step is to validate the competencies with a following evaluation of the proficiency of every employee. The rest of the process was left unchanged. These final steps of the updated process for the competence map creation are shown in Figure 27.

Figure 28 provides the full updated process for the competence map creation.

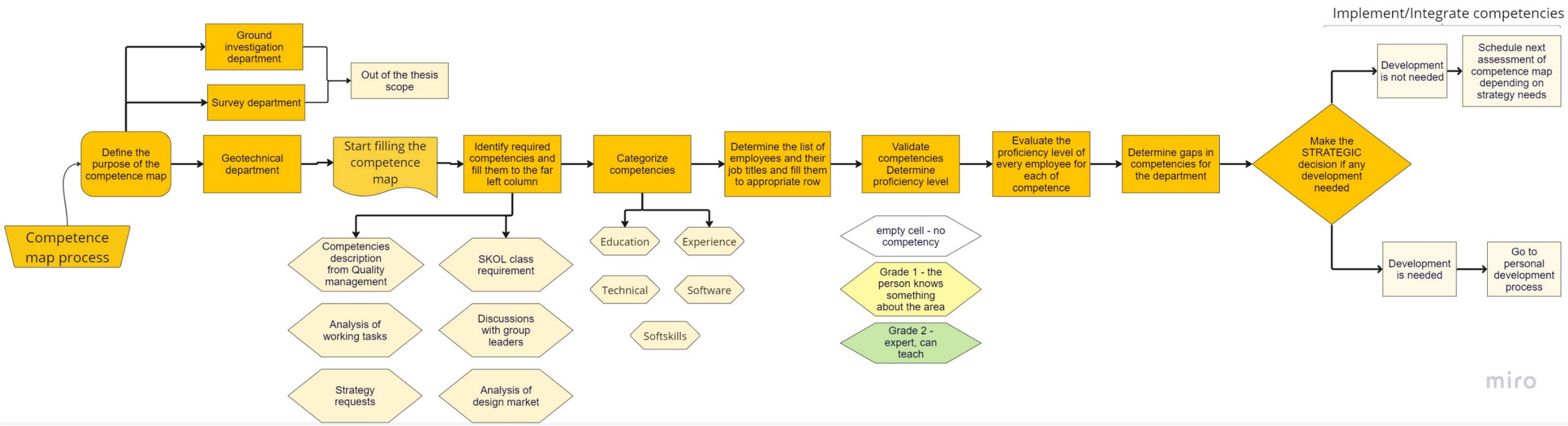


Figure 28. The final proposal for the Competence map creation process.

Figure 28 combines all steps presented in previous figures of subchapter 6.3.2. The Competence map creation process is illustrated in one line from the first to the last chain piece. The process is described in more detail as it was required from the validation stage and provides all corresponding actions that should be performed during the implementation procedure.

The template for the competence map was updated slightly and is shown in Figure 29. The changes were made specifically to the "education and competence" field, by grouping the FISE competencies variations and education options into one corresponding row and including the specification of experience to the list.

Description	Skills	Geotechnical department												
		ENGINEERS												
		Name		Name		Name								Highest Rating
		Job position		Job position		Job position								
		Current	Goal'23	Current	Goal'23	Current	Goal'23	Current	Goal'23	Current	Goal'23	Current	Goal'23	
Education and competencies	FISE (T, V, PV)													
	AMK, YAMK, DI													0
	Experience, years													0
Technical	Rock mechanical engineering													
	Stability calculations													0
	Reinforcement design													0
	Soil mechanical engineering													0
	Stability calculations													0
	Reinforcement design													0
	Hulevesi													0
	Vertical planning													0
	Site drainage													0
	Retaining walls calculation													0
	Structural design													0
	Design supervision													0
	Excavation and blasting design													0
														0
														0
														0
Software	Autocad													0
	AutoCad Civil 3D													0
	Building Design Suite													0
	Infrastructure Design Suite													0
	Naviate C3D													0
	MicroStation V8i ja Terra-sovellukset													0
	Revit Structure ja Architecture													0
	Civil 3D													0
	Navisworks													0
	InfraWorks													0
	Solibri MV													0
	IFC Toolbox													0
	AutoDesk ReCap													0
	Faro Scene													0
	Slope													0
	GEO5													0
	GeoCalc													0
														0
														0
	MS Office													0
Soft skills	Communication													0
	Attitude													0
	Time Management													0
	Team Management													0
	Tasks decomposion													0
	Ability to communicate with group leader (understand the tasks, make correct questions)													

empty cell	no competency in that area
1	person knows something from the area
2	expert, can teach somebody

Figure 29. The final proposal for the Competence map template.

The table of competence map presented in Figure 29 may be used as an effective instrument for assessing the performance of employees. By collecting the total scores for grades, management can evaluate both the highest and average levels of performance for each individual and skill, providing the opportunity for a deeper analysis of the situation.

6.3.3 Update of the Proposal for Process of Development Tracking

The process of development tracking was updated to include changes to the list of procedures and process steps. The updated tracking process is presented in Figure 30.

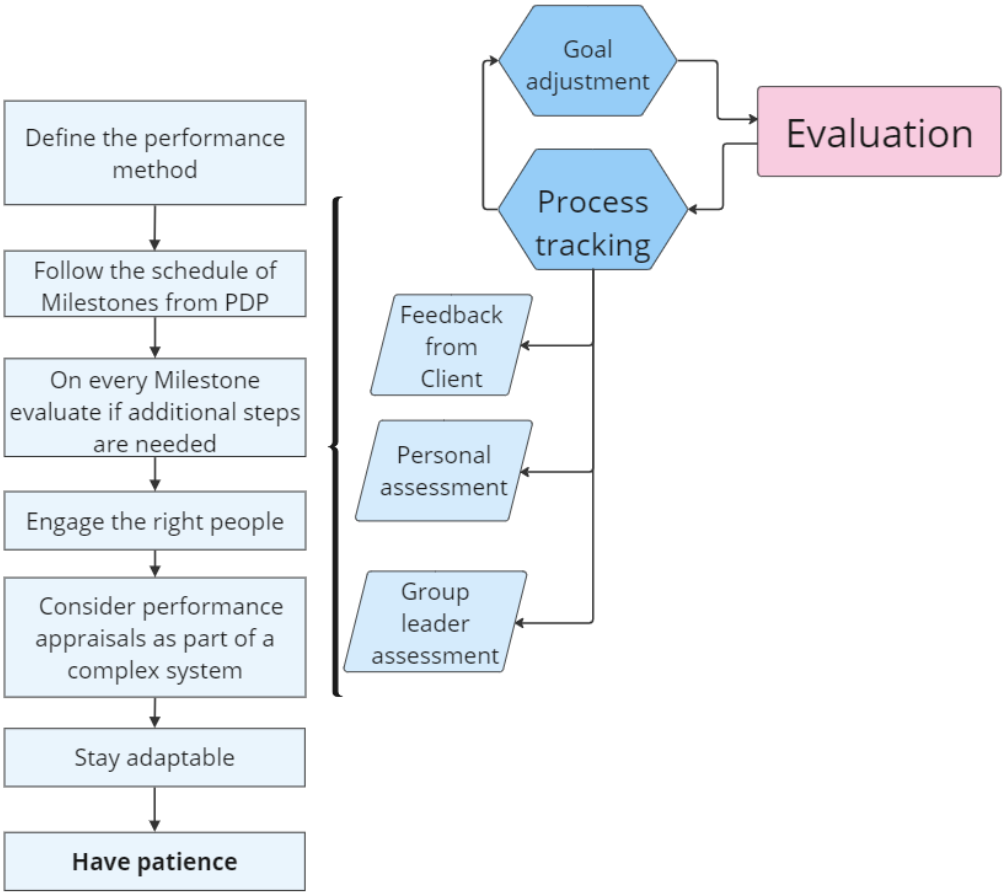


Figure 30. The updated process of the development tracking.

As can be seen from Figure 30 one of the updates was made in response to a request from management during the Data 3 evaluation to exclude the OKR

procedure and add Feedback from the Client as an assessment method. Additionally, the process steps were described in greater detail, including a connection to milestones from the PDP template and the ability to add new development steps when needed. The development tracking stage is tightly connected with the evaluation step of the development process and influences the goal adjustment possibility.

6.4 Introduction of the Final Proposal of the Development Process

The final version of the work personal development process after all updates is presented in Figure 31. It includes the phases, described in the previous subchapters and represents the solution of the main business challenge, addressed in this thesis.

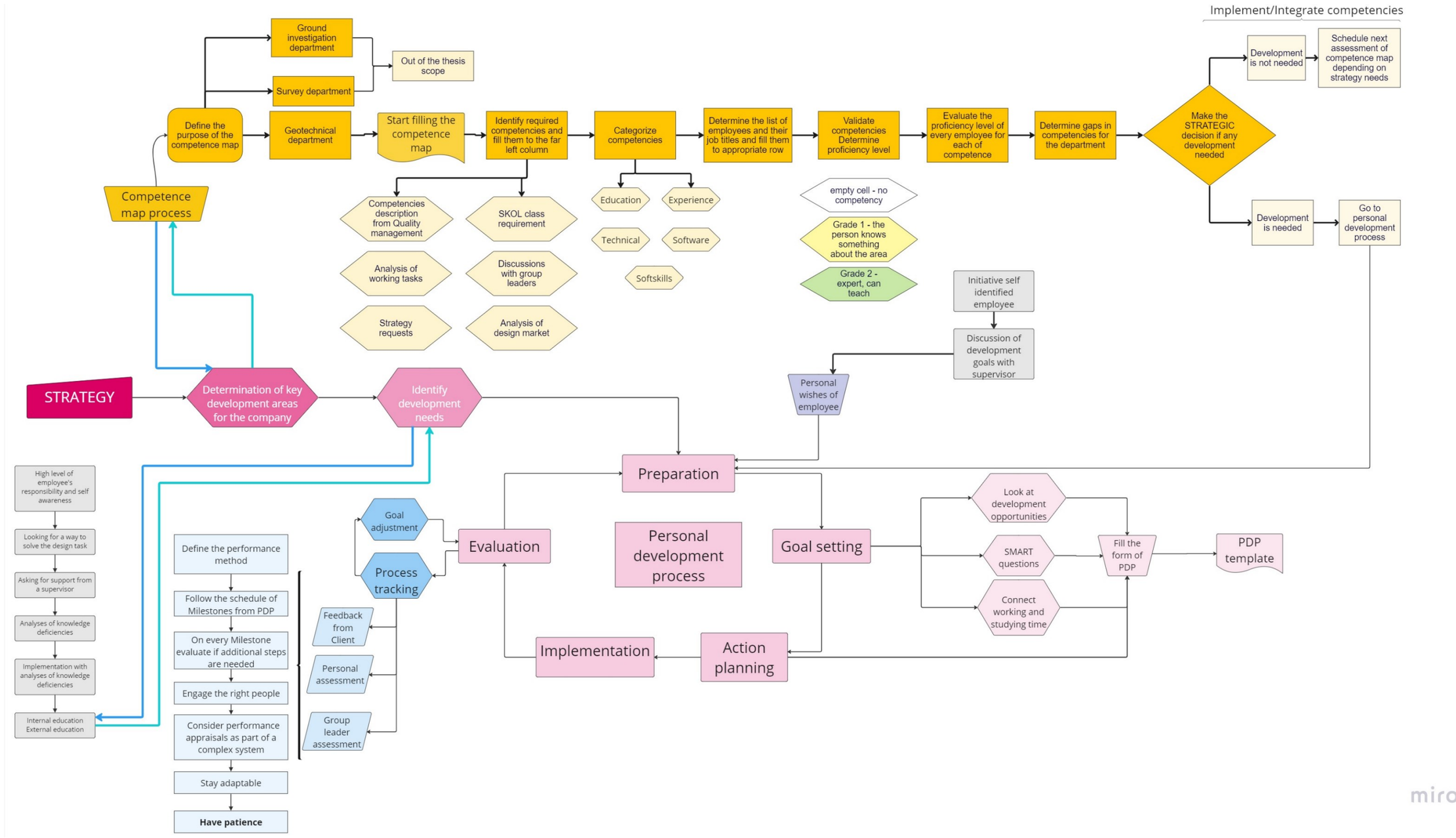


Figure 31. The final proposal of the work personal development process.

The final proposal includes all the initial components presented in detail in Chapter 5 and is updated based on the comments from the Data 3 workshop. Three weaknesses identified in Chapter 3 have been addressed in the final proposal, and the improvements are illustrated in Figure 31. The proposal includes:

- The work personal development process and PDP template in pink coloured boxes. The PDP template is presented in Figure 32.
- The development tracking process part is coloured blue.
- The competence map creation part is marked yellow. The template for the competence map is illustrated in Figure 29.
- The strengths brought from the existing ad hoc process and modified to the strategically oriented process have been integrated into the proposal and shown in grey-coloured boxes.

All described components come together to form the work personal development plan for the Geotechnical department of the case company which was the objective of this thesis.

The main template resulting from the designed process is presented in Figure 32.

The template did not receive any comments during the validation round and was accepted as designed.

The personal development plan offers individuals the opportunity to establish not only immediate goals that are essential for personal and organizational growth but also future goals, which are illustrated within the template. This affords employees a broader perspective on upcoming tasks and enables them to plan effectively for their future within the company.

Personal development plan

Employee name:	
Supervisor name:	
Date of initiation	

CURRENT GOALS

FUTURE GOALS

		Goal 1	Goal 2	Goal 3	Goal n
GOALS					
Timeframe					
STEPS	Which courses/trainings shall be passed				
	What are slowdowns/complications				
	Who can assist/help/teach/guide				
	Personal actions				
RESULTS	What is the result, formulated by SMART principles				

Milestone review date 1							
Review results:		planned					
		achieved					
Milestone review date 2							
Review results:		planned					
		achieved					
Milestone review date n							
Review results:		planned					
		achieved					

	Goal 1	Goal 2	Goal 3	Goal n
GOALS				
Timeframe				
STEPS				
RESULTS				

Figure 32. The final proposal for the Personal development plan template.

While filling out the personal development plan, presented in Figure 32, carefully and consistently, management and employees can build a structured and strategic-oriented development routine. Such a routine ensures the workers are in the plans of the company and offers the company predictable next steps for planning success.

6.5 Practical Next Step Recommendations

The current thesis research was conducted to establish the work personal development process for the Geotechnical department within an engineering design company. Due to time constraints, it was impossible to proceed with the pilot trial of the process in the department and find out the possibility of process details being adjusted. Therefore, the first step involves the integration of the process into the department's routine operations, followed by a test phase and data collection for possible process refinement.

The second step requires the application of the tested and refined development process to the Survey department and the Ground investigation department, both of which are also part of the engineering design company.

And as the third step, it can be recommended to continuously monitor and adjust the process, as personnel development within the company is an ongoing process that must be regularly adapted to meet current market demands and changing skill requirements.

Chapter 6 focuses on the validation of the draft proposal by collecting information from Data 3, updating the process proposed in Chapter 5, and presenting the final proposal for the work personal development process and PDP template.

In Chapter 7, the conclusion and proposal for further steps are presented. It involves identifying further possible steps for process improvement and provides the executive summary of this thesis.

7 Discussion and Conclusions

The final chapter of this thesis serves to summaries and concludes key findings and results presented throughout the text. Consisting of three subchapters this section begins with an executive review of the writing process and offers an extensive self-evaluation of the research complete with references to relevant literature and definitions. Finally, this chapter concludes the thesis with closing remarks.

7.1 Executive Summary

The contemporary professional environment is characterized by constant changes and forces companies to constantly adjust to transformations to remain up-to-date with the latest developments. It is important to note, however, that organizations are not self-sufficient entities, as they are comprised of people, and these people are responsible for either the progress or the failure of the enterprise. In order to achieve success, the organization should employ educated, motivated, and trained personnel, which can lead the company toward its goals.

The objective of this thesis was to create a work personal development process along with a personal development plan template that supplements the process. Currently, the case company only follows an ad hoc development process where newcomers are often lost due to unclear goals, management is overloaded due to a lack of personnel they can delegate responsibilities to, and the process as a whole is affected by a significant "bus factor" that poses a high risk of job task failure. The company consists of three departments: Geotechnical, Survey, and Ground investigations. Due to time limitations, this thesis focuses only on the creation of the process for the Geotechnical department, as it is the largest department within the company.

The applied action research type was used in this thesis to address the business challenge in a practical manner. The research design was performed

in four stages, including three data collection rounds, conducted as interviews, personal conversations, and workshop.

The research was initiated with an analysis of the current state by conducting personal interviews during the Data 1 collection stage. The survey of Data 1 findings revealed the strengths and weaknesses of the existing ad-hoc development process. While the current process does provide consistent personnel development, it is disordered and lacks connectivity to the strategic goals of the company. Eight weaknesses were identified, which can be categorized into three groups according to their level of influence: weaknesses in the quality management system, at the company level, and at the employee level. For further consideration, three of them were selected, focusing on the highest levels of the company hierarchy. It was considered that improving these three weaknesses would facilitate an improved development process.

The second step of the research involved a literature study aimed at identifying best practices for the development process, as well as the creation of the competence map and development process tracking as important components of the core process.

Based on the summarized results of Data 1 and literature studies, the personal conversations were conducted during the Data 2 collection stage, which resulted in a first proposal for the work personal development process and personal development plan template. The template for the competence map was created as supplementary material for the connection of the development process with the strategy of the company and key development goals.

The Data 3 stage comprised a workshop, which was performed in the fourth step of the research to validate the proposed draft. Feedback received during the workshop provided improvement ideas and comments, which were incorporated into the final proposal of the development process.

As the next steps, it was recommended to integrate the created process into the routine life of the Geotechnical department, adjust it, if necessary, apply such

tested process to the other two departments, and finally continuously monitor the process and its content to allow the agile lifecycle.

7.2 Self-Evaluation Of Thesis Project Credibility

The thesis design was conducted strictly according to the predetermined schedule and framework. The literature review provided a diverse range of sources to facilitate a comprehensive analysis of best practices. The seamless communication within the case company facilitated extensive data collection and fostered a productive collaboration during the process creation phase.

The number of weaknesses chosen for improvement was a challenging aspect of the research due to the considerable volume of data to be processed. However, from a different perspective, the creation of three crucial components of the development process would enable the case company to expedite the implementation process without having to wait for the establishment of other elements.

As this thesis is applied action research with qualitative study **internal validity** is the most applicable criteria for evaluation. Based on Bell & Bryman (2019) the degree of internal validity affects the confidence that can be placed on the conclusions received from the study. To ensure the validity, the process of the thesis creation was presented in a transparent manner. The CSA and the proposal drafting involve the use of multiple sources, including academic and practical study materials. The designed process was co-created and validated by the management of the company, who provided extensive knowledge and expertise in the implementation of best practices and process management.

The reliability of a thesis refers to the degree to which the research findings can be reproduced with similar outcomes. In other words, will the results be comparable if the other researcher does the study with the same data? The raw data obtained throughout the information collection procedure can be used to demonstrate the validity of this thesis. The field notes for Data 1 are cited in the text and available in Appendix 1. The most significant findings from Data 2 are

provided in the corresponding tables in Chapter 5. Additionally, the comments received during the validation process are summarized in Chapter 6 and Attachment 2. The data was gathered from many sources, ensuring the objectivity of the research conclusions.

The triangulation method was used to increase **the credibility** of the research. The methodological credibility is provided by the utilization of various approaches for data collection, including interviews, workshops, and personal conversations. Furthermore, the best existing practices have been investigated through an extensive literature review. Data credibility has been established by engaging the informants with various experiences and responsibilities as well as conducting several stages of discussions during the research process. Theoretical credibility has been established through the incorporation of a diverse range of academic and practical literature sources in the research proposal. Finally, analytical credibility has been confirmed through stakeholder involvement in the co-creation of the proposal, which means that the opinion of more than one “analyst” has been considered in the resulting proposal.

The relevance of the thesis can be estimated in several steps. First of all, the business challenge, which is addressed in this study, was formulated in a real-life case company. The objective was to create the development process for the employees of the company and the final proposal, presented in Chapter 6, is the created process with the supplemental template forms. The created development process was validated by the stakeholders from the case company, who accepted the proposed approach. This validation served as a significant indicator of the relevance of the proposed product. As a result of this validation, it was decided to integrate the process into the management system and present it during the annual quality audit.

The logic of the thesis is best illustrated in subchapter 2.2, where the research design is described comprehensively. This section explains the different stages that were followed, starting from the evaluation of the business challenge,

followed by the CSA, literature study, proposal draft, and ultimately the proposal validation.

7.3 Closing Words

The engineering design company as well as any other company should be constantly developing to remain aligned with worldwide progress and evolution. Given that people are the driving force behind every company, prioritizing the development of employees should be a key objective for organizations. Well trained, highly educated, and assured employees are the cornerstones of the company's success. While personnel are confident, they are more motivated for leading the company to its strategical goals.

This thesis was created as a part of the management system improvement for the case company. Implementation of the recommended work personal development process and personal development plan template helps the case organisation to ensure its market position and establish a more attractive working environment.

References

Anderson, D. L. (2018). Organization Design: Creating Strategic & Agile Organizations. SAGE Publications.

Beausaert, S., Segers, M., van der Rijt, J., Gijselaers, W. (2011). The use of Personal Development Plans in the workplace: A literature review.

Beck, R.J., Livne, N.L., & Bear, S.L. (2005). Teachers' self-assessment of the effects of formative and summative electronic portfolios on professional development. European Journal of Teacher Education, 28, 221-244.

Becker, B. E., Huselid, M. A. (1998). High-performance work systems and firm performance. Research in Personnel and Human Resource Management, 16, 53-101.

Bell, E., Bryman, A., Harley, B. (2019). Business Research Methods (5th ed.). Oxford, United Kingdom: Oxford University Press.

Bradshaw, L. K., Hawk, P. P. (1996). Portfolios for the continuing licensure of beginning teachers: Their development and assessment. Paper presented at the Annual Meeting of the National Staff Development Council, Vancouver, British Columbia, Canada.

Bunker, A., Leggett, M. (2004). Being wise about teaching portfolios: Exploring the barriers to their development and maintenance. Retrieved from http://www.herdsa.org.au/wp-content/uploads/ conference/2004/PDF/P047-jt.pdf on 20/09/2007. Accessed 14.02.2023.

Covey, S.R. (2004) The 7 Habits of Highly Effective People Personal Workbook. Simon and Schuster.

Creswell, J. (2003). Research design: Qualitative, quantitative, and mixed methods approaches (2nded.).Thousand Oaks, CA: SAGE Publications.

Effy (2022). 7 Performance Review Templates For Manager in 2023. https://www.effy.ai/blog/performance-review-template. Accessed 14.02.2023.

Gridin, A. (2013, June 5). Competence model of a specialist in computer security. Habr. https://habr.com/ru/post/182176/. Accessed 14.02.2023.

ISO 9001 helps. (2023). 4.4 Management System Processes. Available at: https://www.iso9001help.co.uk/4.4%20Management%20System%20Processes.html. Accessed 12.02.2023.

International Organization for Standardization. (2015). ISO 9001:2015 Quality management systems — Requirements. Geneva, Switzerland.

Johnson, R. B., Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. Educational Researcher, 33(7), 14-26.

Lowe, A. (2019). Personal Development Planning - what, why, who, when, and how? https://www.linkedin.com/pulse/personal-development-planning-what-why-who-when-how-amy-chapman/. Accessed 12.02.2023.

Lyons, N., Evans, L. (1997). Portfolio: A tool for self-directed learning at work. Paper presented at the Self-directed Learning: Past and Future Symposium (Montreal, Quebec, Canada, September 1997).

TechLeadConf. (2021). Abstracts. Retrieved from https://techleadconf.ru/2021/abstracts/7777. Accessed 01.02.2023.

Orland-Barak, L. (2005). Portfolios as evidence of reflective practice: What remains "untold". Educational Research, 47 (1), 25-44.

Falcone, P. (2013). The Performance Appraisal Tool Kit: Redesigning Your Performance Review Template to Drive Individual and Organizational Change. AMACOM.

Pracht, I. (2023). The process of employee development is a systematic path to excellence. In Habr. https://habr.com/ru/post/716070/. Accessed 14.02.2023.

Sanghi, S. (2008) The Handbook of Competency Mapping: Understanding, Designing and Implementing Competency Models in Organizations. SAGE Publishing India.

Smith, K., Tillema, H. (2001). Long-term influences of portfolios on professional development. Scandinavian Journal of Educational Research, 45, 183-202.

Tamkin, P., Barber, L., Hirsh, W. (1995). Personal Development Plans: Case Studies of Practice.

Tashakkori, A., Teddlie, C. (1998). Mixed methodology: Combining qualitative and quantitative approaches. Thousand Oaks, CA: SAGE Publications.

Williams, C. (2007) Research Methods. Journal of Business & Economic Research, 5, 65-72.

Appendix 1. Field notes for interviews of Data 1

Interview field notes					
				Interview number: 1	Date: 24.01. 2023
Interviewee			SKOL	03	
			Work experience in total	20	
			Work experience in the company	17	
			Job title	Project manager, designer	
Interview details	Date	24.01.2023			
	Starting time	10.00			
	Ending time	10.32			
	Type of interview	face-to face	phone call	online	
Special notes					

Figure 1. Information about Interviewee 1.

Table 1. Field notes 1. Questionnaire for Engineers.

Question	Response
Do you know about our company's introduction and development plan processes?	No, these processes are not introduced and are not known.
What is the company's current procedure for personal development as per your experience?	There is no existing planned process, development occurred in the working process when new tasks are coming and there is not enough expertise for the implementation.
How often do you discuss your development plans with your supervisor?	Once a year
What is the goal you want to reach by personal development plan?	To settle a proper education process.
Do you need to monitor the progress of the personal development plan implementation? How often?	Yes, monitoring shall be arranged. 2-3 times per year

Question	**Response**
Shall the personal development plan be designed from the first days of work, after the trial period, or in one year?	A new person shall first settle on the working place and become familiar. So, the first development plan shall be designed in about one year.
What are the most significant weaknesses of the company's current process of personal development?	The education of the employees does not follow the standard rules and norms (considers engineering norms).
What are the strengths?	Development can be done in any direction the person wants. In case support is needed, it can be always obtained.
What are the most important soft skills you want to develop, which may help you in your career?	Communication skills, mostly with external parties.
What are the most important hard skills you consider the most important for a further career?	3D Modelling, groundwater handling, and geotechnical calculations.
What motivates you (can motivate) for development, trying new skills, and new responsibilities? Higher salary, appreciation, self-pride, higher title?	Better knowledge lowers the stress level from unknown tasks. Other motivations are self-confidence and proper monetary reward.
Any comments or suggestions?	Not at the moment

Interview field notes

Interview number: 2 Date: 24.01. 2023

Interviewee	SKOL	01			
	Work experience in total	27			
	Work experience in the company	12			
	Job title	Member of the directors board			
Interview details	Date	24.01.2023			
	Starting time	13.50			
	Ending time	14.25			
	Type of interview	face-to face	phone call	online	
Special notes					

Figure 2. Information about Interviewee 2

Table 2. Field notes 2. Questionnaire for Management.

Question	**Response**
Do you know about our company's introduction and development plan process?	Yes, the respondent is the creator of the procedure in the company.
Are you familiar with the strategic plans of the company?	Yes, but does not remember by heart.
What is the procedure you are following to create a development plan with your team members?	The template from the Quality management system.
How often do you discuss development plans with your team members?	Once per year.
While designing the personal development plan for your subordinate, what are the main drivers for development directions? Which issues do you think are the most important to be considered in development plan creation?	What the person wants him/herself and what the company needs at the moment (ways of expansion or expertise gaps). Free will shall be considered the most.

Question	Response
What is the goal of the personal development plan for your team members?	To develop a person to become better in his/her work.
After you made a personal development plan with your subordinate, do you monitor it? Do you settle any milestones to check the progress?	The ”look back” is used as monitoring. Every year the progress of the last year is recorded. No milestones.
What is your opinion on how often the development process should be monitored?	More often monitoring is needed only in exceptional cases.
What is your opinion, can the process of personal development be unified in the company, or by departments (geotechnical, survey, investigations) or shall it be individual?	One template can be designed for all departments with possible widening if necessary.
What are the most significant weaknesses of the company's current process of personal development?	Planning does not have a clear goal; these goals are not strategy connected. Probably progress can be checked more often than just once a year if goal setting is connected to the strategy and these goals are vital.
What are the strengths?	People can become better at their work and progress in their careers.
What is your opinion on how the process shall be built?	The process is good like it is. No immediate ideas on how the process can be changed.
Shall the personal development plan be designed from the first days of work, after the trial period, or in one year?	At the moment, is done so, that first development plan is created during the interview. Then it is good to update it in 3 months, then 1 year.
What are the most important soft skills to be developed by personnel?	Pro-activity, ability to work independently.
What are the most important hard skills to be developed by geotechnical engineers, and drawers?	Succession from senior to junior, creation of effective pairs out of them. Forming the ability to work “do what you are expected to do, not what you are told to do”.

Question	**Response**
In your opinion, what motivates people the most for skills development and achievement of new responsibilities? Higher salary, appreciation, self-pride, higher title?	Interest in the work, appreciation, working tasks, and the possibility to be proud of him/herself.
Any comments or suggestions?	Not at the moment

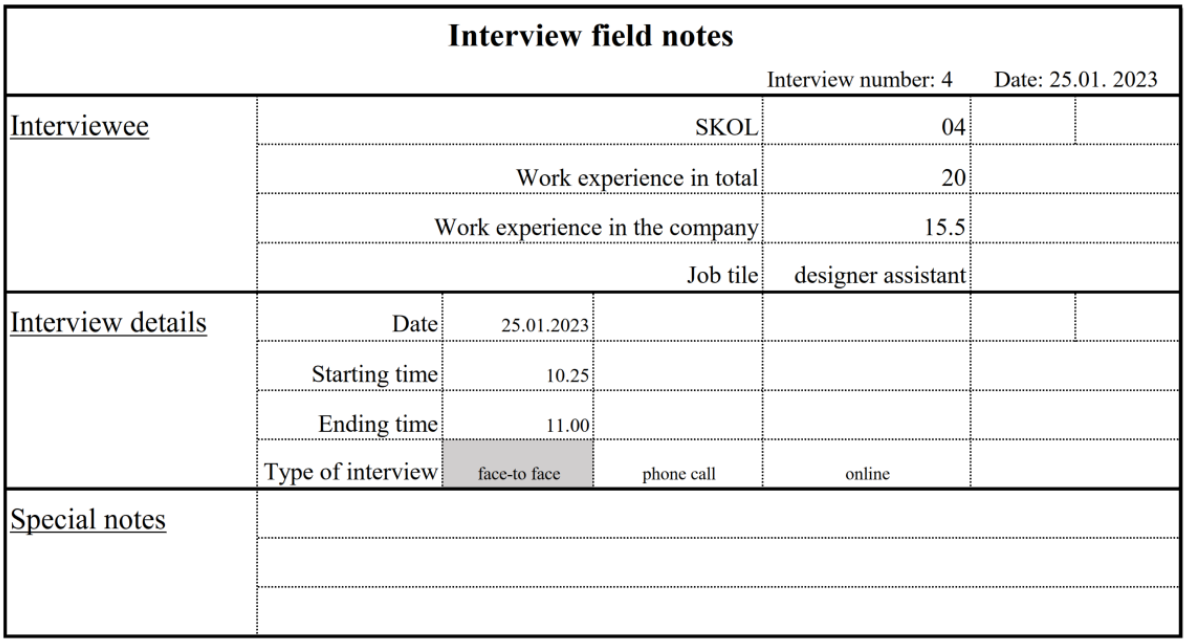
Interview field notes						
				Interview number: 3	Date: 25.01. 2023	
Interviewee			SKOL	05		
			Work experience in total	4		
			Work experience in the company	4		
			Job tile	designer assistant		
Interview details	Date	24.01.2023				
	Starting time	16.30				
	Ending time	16.50				
	Type of interview	face-to face	phone call	online		
Special notes	interview was held in Russian with further translation to English for notes					

Figure 3. Information about Interviewee 3.

Table 3. Field notes 3. Questionnaire for Engineers.

Question	**Response**
Do you know about our company's introduction and development plan process?	No, these processes are not introduced and are not known.
What is the company's current procedure for personal development as per your experience?	Development progresses in the working process
How often do you discuss your development plans with your supervisor?	No discussions
What is the goal you want to reach by personal development plan?	To study design software, perform external education to have the ability to make the work faster and independently.
Do you need to monitor the progress of the personal development plan implementation? How often?	Monitoring shall be done several times per year to check the direction of development.
Shall the personal development plan be designed from the first days of	This shall be done sometime after the start when a person became familiar with the company

Question	Response
work, after the trial period, or in one year?	
What are the most significant weaknesses of the current process of personal development in the company?	Workers do not talk about their problems, concerns, and needs.
What are the strengths?	Due to development in the working process – the quality of project growth, fewer mistakes happen.
What are the most important soft skills you want to develop, which may help you in your career?	Communication skills
What are the most important hard skills you consider the most important for a further career?	Construction site visits
What motivates you (can motivate) for development, trying new skills, and new responsibilities? Higher salary, appreciation, self-pride, higher title?	Appreciation, the possibility to be proud of yourself, growing tasks complexity, responsibility.
Any comments or suggestions?	People should talk more to each other, to share their expertise.



Interview field notes						
				Interview number: 4	Date: 25.01. 2023	
Interviewee			SKOL	04		
			Work experience in total	20		
			Work experience in the company	15.5		
			Job tile	designer assistant		
Interview details	Date	25.01.2023				
	Starting time	10.25				
	Ending time	11.00				
	Type of interview	face-to face	phone call	online		
Special notes						

Figure 4. Information about Interviewee 4.

Table 4. Field notes 4. Questionnaire for Engineers.

Question	**Response**
Do you know about our company's introduction and development plan process?	No
What is the company's current procedure for personal development as per your experience?	Self-learning (no experts in the company for software, only for Geotechnical)
How often do you discuss your development plans with your supervisor?	A couple of times from the beginning of work in the company
What is the goal you want to reach by personal development plan?	More expertise, technical knowledge, and how to use the software.
Do you need to monitor the progress of the personal development plan implementation? How often?	Yes, and to settle deadlines in advance to have the progress measurements.
Shall the personal development plan be designed from the first days of work, after the trial period, or in one year?	Give time to the worker for settling, time to the company to find out the worker's capabilities, and make an assessment of the person.

Question	**Response**
What are the most significant weaknesses of the current process of personal development in the company?	The main weakness is that the plan is missing, there are no monitoring, deadlines, directing, or guiding. Workers have a lack of knowledge of certain given tasks.
What are the strengths?	Senior engineers always find the time for teaching, workers have the freedom to learn the issues they want, and there is support for desired education.
What are the most important soft skills you want to develop, which may help you in your career?	Communication skills, and patience while teaching others.
What are the most important hard skills you consider the most important for a further career?	Math, 3D-space thinking
What motivates you (can motivate) for development, trying new skills, and new responsibilities? Higher salary, appreciation, self-pride, higher title?	Desire to learn new things gives the inspiration
Any comments or suggestions?	The best development process will be to get a challenging project and to learn new things with supervision and explanations from other experts. Goal settings are needed as an addition.

Appendix 2. Minutes of the meeting for workshop Data 3

MINUTES OF THE MEETING

Date: 15.03.2023

Participants:
Managing director
Technical director
Director for design
Leading expert
Director for international projects, secretary of the meeting

The issue: Commenting and validation of the work personal Development process.

Agenda:
- Presentation about the development process proposal.
- Commenting round
- Validation

It was discussed:

1. The thesis author presented a draft proposal of the development process, a proposal for the Personal development plan template, and a template for the competence map), which were created based on conducted interviews and current state analyses.
2. At the moment there are complications with the development process and its connection to strategy. These complications affect the company's profit, inter alia.
3. It can be seen that some workers can formulate their needs and wishes, while others do not realize the problem.
4. Among other problems, workers are suffering from unclear tasks and undefined goals (also follows from the lack of communication)
5. Some people lose their motivation because of poorly organized feedback, experience monitoring, and goals settings.
6. The "bus factor" of the managers is still high.
7. Analyses revealed the problems, which were not visible before.

Comments to the developed proposal

1. Process of Competence map creation:
    - The process is not precisely described. More clear steps shall be added.
    - Add sources of skills for the competence list
2. The competence map template:
    - Add the row" Experience".
    - Specify gradation for FISE (V, PV, T).
    - Combine education into one row and add the gradation criteria.
    -
3. The tracking process:
    - OKR is too demanding and shall be removed from the list. Personal assessment and group leader assessment are enough.
    - Client feedback might be added to the assessment list.
    - Add more detailed steps and the possibility to edit Milestones.

It was decided:
4. Proposal shall be updated according to the comments given.
5. The proposal can be validated.
6. After the update the integration of the process can be started.

Figure 1. Minutes of the meetings from the validation discussion