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# Employee Training and Upskilling for Digital Roles for a SME Company in IT Sector

# Abstract

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The objective of this thesis was to create a step-by-step guidance on how to approach the case company's employee training and upskilling for digital roles. The importance of upskilling has increased for the case company due to the revolutionary effects of digital technology. The small size of this company makes it even more difficult to be successful due to issues including obsolete skills, a lack of training tools, and inadequate training materials. A lack of clarity on the necessary competencies exacerbates the problem.

This thesis utilized interviews as its main data collection technique. The theoretical framework focused on theories and approaches for conducing upskilling, especially for SMEs in the IT sector, and identifying relevant steps for formulating an upskilling and training approach. The current state analysis delved into the current practices implemented by the company to enable staff members to enhance their skills. The purpose was to find evidence of the company's current approach to employee training, including topics like resource allocation, training method choice, and creating a culture that supports ongoing learning and growth. By conducting in-depth interviews with significant stakeholders, such as staff members engaged in upskilling initiatives and decision-making processes, this method aimed to reveal complex viewpoints and collect extensive qualitative data.

The outcome of this thesis is a framework provided for the case organization in fostering employee upskilling. The framework was first drafted based on the theoretical inputs and then refined by infusing the needs and wishes of the case organization. This method aims to dissect the theoretical foundations supporting the organization's upskilling programs through interviews and conversations with decision-makers, including top management and HR officials. The thesis results in providing a framework that articulates the steps for the organization's upskilling approach. This investigation adds value to the scholarly conversation while also offering useful perspectives on the importance of upskilling in the context of an organization.

With the help of this thesis, the organization will be able to approach the upskilling and training of its employees in an orderly manner. It should also help to manage resources, choose training methods, and cultivate an environment that encourages ongoing learning and skill improvement in upskilling personnel. The intended result is to provide better digital solutions, increase project success rates, and cultivate a creative workplace culture.

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| Keywords | Employee Training, Upskilling, SME, IT, digital roles |

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# 1    Introduction

Digital technologies, which include big data analytics, social media, cloud computing, the Internet of Things (IoT), mobile technology, and artificial intelligence (AI), (Sánchez and Zuntini, 2018) have a tremendous influence on clients and businesses. Employing these kinds of technologies enables organizations to undergo digital transformation (DT), and once this happens, the business value of the organizations begins to increase. (Libert et al., 2016)

For companies to remain competitive, promote effectiveness, and provide customers with high-quality services, they must make investments in skill acquisition and training. To be able to develop their skills or strengthen their abilities in specific domains, employees must be given comprehensive guidance and orientation. In such a scenario, the primary focus might focus on digital technologies and skills applicable to the company's IT projects. Multiple kinds of such training are attainable, including workshops, seminars, online courses, and hands-on training sessions.

Roles within a company with a particular commitment to employing digital technology and experiencing digital transformation are commonly called "digital roles." Software developers, data analysts, cybersecurity specialists, cloud engineers, digital project managers, and other professionals might play these responsibilities. The process for improving the employee's knowledge, abilities, and skills to comply with the standards set by the digital age and successfully carry out projects related to information technology is recognized as *employee training and upskilling.*

*Upskilling* is the procedure aimed at enhancing an employee's existing skills to accommodate the demands of the quickly evolving digital world. The strategy for digital is equally centred on a company´s performance and advancements in technology (Yeow et al., 2018). It involves integrating existing staff members and giving them additional training and instruction to ensure that they are capable of performing more complex tasks or adopting modern technologies and approaches.

At the same time, business practice shows that employee upskilling and training for digital roles in project-based organizations often bring many challenges for middle-sized IT companies. Budgetary constraints could stop certain small IT organizations from making the kind of significant investments needed for comprehensive, excellent training

programs. Planning upskilling programs and sessions becomes important for the company's growth.

This thesis discusses the responses to the need to improve employees´ skills and competencies so that they perform better "digital roles" in the context of one selected case company.

## 1.1    Business Context

The case company of this thesis, the Zplus Solution, is an information technology company that falls somewhere halfway in terms of size and resources, being neither a small startup nor a major business. It is *a middle-scale IT house.* It is located in Vadodara, Gujarat, India. It has 102 employees, and it provides multiple projects and 23 different types of services.

For this middle-scale IT company working in a project-based business, training and upskilling has become an important priority. For the case company, investment into developing a skilled, flexible, productive workforce that can help to handle the changing demands of the digital age and enhance the company´s profitability.

## 1.2    Business Challenge, Objective and Outcome

Considering the fundamental effects of digital technologies on every aspect of the case company´s inner and outer environment, implementing skill enhancement programs has become an essential concern for the case company. Inadequate training materials, outdated skills, and limited access to training tools and technologies might result in failure in the case company´s ongoing and future projects.

Employees who work for the company depend upon projects, and currently they find it challenging to have adequate time for training and skill upgrading as a result of the frequent severe timelines for projects. Being a small company, the Zplus Solution does not have a specialized training team or enough own trainers who are competent in the most recent digital technology. Also, it is currently challenging for the case company to pinpoint a specific lack of expertise among personnel, particularly since the company lacks a well-defined understanding of the abilities required or an established performance assessment process. These factors amplify a negative impact of not having enough training initiatives.

Therefore, *the case company needs a step-by-step guidance on how to approach its employee training and upskilling* (including planning adequate resources, selecting training techniques, and eventually establishing a culture that encourages continual development of knowledge and skills). This Thesis will approach this challenge by developing recommendations/guidance that will focus on planning the training and upskilling for the technology-related roles in project-based work of the case company.

The Outcome of the Thesis is *the recommendations/guidance on how the company can approach the upskilling of its employees´ technological and digital skills.* The staff should benefit from this guidance by improving the ability to maintain its expertise, thus providing clients with superior digital solutions in digital projects, and enhancing project success rates. Furthermore, there is a hope in the case company that it should also encourage an innovative culture within the company, and lead to the development of innovative solutions.

## 1.3    Thesis Outline

This thesis, which focuses on a small and medium-sized enterprise (SME) in the IT sector in India investigates the execution and results of training and upskilling initiatives aimed at providing staff members with the necessary digital skills. It also looks at the obstacles encountered and optimal methods for developing a workforce with the necessary skills.

Readers can anticipate an insightful journey from assessing the digital competency gaps to meticulously designing and implementing training strategies, culminating in a comprehensive analysis that unveils the transformative power of upskilling initiatives for an SME navigating the dynamic terrain of the IT sector.

This Thesis is written in seven sections. Section 1 describes a brief introduction to the topic and discusses its problems. Section 2 explains the materials and methods needed for the research approach and designing thesis. Section 3 reports a literature and best practice review which gives an in-depth knowledge of existing theories and methods used for upskilling current state analysis. Section 4 presents the results from the current state analysis based on data collection from the company and reviews. Section 5 presents the initial proposal. Section 6 reports on the results of early testing and validation. Section 7 concludes the thesis.

## 2 Method and Material

This section describes the research approach, research design, and data collection and analysis methods used in this Thesis.

### 2.1 Research Approach

The selection of research families and methodologies is crucial in determining the nature of the study, which aims to comprehend and improve employee training and upskilling for digital positions inside SMEs in the IT industry. Research on the fundamental level distinguishes between basic and applied research families. While applied research focuses on solving real-world problems in particular settings, basic research, which is grounded on theoretical investigation, seeks to increase general knowledge. A practical focus on upskilling inside a SME belongs to the applied research family especially relevant for this thesis. It makes it possible to evaluate training tactics practically and assess how well they work in actual situations.

For this thesis, a qualitative research strategy is the preferred methodology within the field of applied research. Qualitative research is well-suited to elucidate the complexities of employee training and upskilling in digital positions because it is intrinsically focused on investigating the depth and subtleties of human experiences. This methodology enables a comprehensive comprehension of the subjective aspects, encompassing the viewpoints, incentives, and obstacles encountered by persons inside the SME's digital labour force. In-depth interviews and other qualitative research methods provide participants a forum to freely express their opinions, which makes it easier to gather detailed, contextualised data. Furthermore, the phenomenological technique is a very useful tactic in the qualitative research approach. Phenomenology is very skilled in delving into people's lived experiences and illuminating how they view and understand training initiatives. Through the application of phenomenological techniques in interviews, the study is able to extract the essence of workers' training experiences, providing valuable insights into how upskilling programmes affect both the performance of the company as a whole and the professional development of its personnel. Furthermore, the exploratory aspect of the study is supported by the use of open-ended interview questions, which encourage participants to express their opinions freely. This

methodology guarantees that the study maintains its adaptability, encompassing unanticipated subtleties that could surface throughout the interview procedure.

To sum up, the research and development methods used for this thesis highlight the pragmatic nature of applied research and the breadth of comprehension offered by the qualitative approach. This thesis aims to provide important insights into practical approaches for employee training and upskilling in digital roles by exploring the lived experiences of workers in SMEs in the IT sector. This will help to foster a nuanced understanding of the opportunities and challenges in this context.

The qualitative research method is more important as it explores employees' subjective experiences to fully comprehend the subtleties of training initiatives. It is clear that a field research is the main emphasis, with first-hand information gathered inside the organizational setting mainly through key stakeholder interviews. The primary focus of the research remains on solving practical challenges and recording the lived experiences of persons undertaking upskilling programs in the changing landscape of SMEs in the IT industry, even though a desk study might complement it by synthesizing current literature.

Using an applied qualitative research methodology, this thesis prioritizes useful ideas for dealing with issues related to staff training and upskilling for digital positions inside a small and medium-sized IT company. In-depth interviews with important stakeholders are a crucial part of the plan, which aims to document the complex viewpoints and experiences of people going through upskilling. The emphasis on a field research highlights the dedication to obtaining primary data inside the organisational framework, guaranteeing a thorough comprehension of the real-world complexities associated with improving digital skills in the SME environment.

The methodology uses qualitative research methodologies in an interview-based study approach to examine staff training and upskilling in the context of a small and medium-sized enterprise (SME) in the IT industry. This methodology guarantees that the research encompasses the breadth and intricacy of the topic, furnishing insightful qualitative information to inform the thesis's analysis and recommendations.

## 2.2 Research Design

Figure 1 below shows the research design of this study.

**SETTING a THESIS OBJECTIVE**
*to build recommendations/guidance for the company how to conduct training and upskilling of employees' technological and digital skills at the case company*

**EXISTING KNOWLEDGE and Conceptual framework for:**
*how to conduct upskilling of employees' technological and digital skills* in mid-sized IT companies, including:
A. Overview of latest theories and approaches to training and upskilling for digital roles in IT (especially for mid-sized IT companies).
B. Identify key elements how to conduct training and upskilling for digital roles in IT (especially for mid-sized IT companies), for example:
    1. tracking of needs/skills/competences based on projects
    2. evaluating of the needs for employee upskilling
    3. evaluating how much time it will take to upgrade the skills
    4. evaluating what kind of training is needed, what kind of an approach etc.

**OUTCOME**
Conceptual framework how to conduct trainings and upskilling, based on selected elements from existing knowledge

**DATA 1**
1) Internal documents,
2) interviews &
3) a survey

**CURRENT STATE ANALYSIS to identify:**
1. **existing training and upskilling practices** at the case company (what is done currently)
2. **conducting the analysis according to the CF,** Conceptual framework, developed in Section 3 (its elements will be clear after finishing Section 3)

**OUTCOME**
1. Current state of training and upskilling in the case company (based on Data 1),
2. CSA results, based on applying CF, Section 3 (based on Data 1)

**DATA 2**
Internal
1) interviews &
2) discussions

**BUILDING an INITIAL PROPOSAL**
*how to conduct training and upskilling of employees' technological and digital skills at the case company*
(its elements will be according to CF + specific gaps in the case company; clear after finishing Sections 3 & 4)

**OUTCOME**
Initial proposal

**DATA 3**
1) Discussions with key stakeholders/ managers, and
2) written feedback

**VALIDATION & BUILDING the FINAL PROPOSAL**
*how to conduct training and upskilling of employees' technological and digital skills at the case company*
(it will be corrected and further developed from Section 5)

**OUTCOME**
Final proposal

Figure 1. Research design of this study.

As shown in Figure 1 the goal of the thesis is to create recommendations/guidance, applied to the particular demands and circumstances of the case company, how best to train staff members and improve their technological and digital proficiencies. In order to effectively upskill employees, the company will need to develop a structured approach that takes into account various factors such as skill tracking, needs assessment, time estimation, and customised training approaches. This approach will ultimately result in a comprehensive plan for upskilling.

Thus, the first step is to gather information from available knowledge and best practice and preliminary outline such an approach. In the next step, this thesis examines the case company's present training procedures utilising internal records, interviews, and a survey in order to comprehend their upskilling strategies. Based on the data gathered, this analysis seeks to illustrate the present state of training and upskilling initiatives and evaluate them in comparison to the created conceptual framework. The results offer insights into the areas of alignment and potential development.

After that, the thesis focuses of crafting own upskilling and training approach, by utilizing internal discussions and interviews to develop a tailor-made plan for improving the case company's technological capabilities. This plan, which is adapted to the needs of the company, will build on the foundations of the previously produced conceptual framework and fill in certain gaps found in Sections 3 and 4.

Finally, this plan is evaluated by the case company. The goal of the discussion and documented feedback provided by managers and important stakeholders is to confirm and improve the suggested training and upskilling strategy for the case company. This procedure will result in the development of a thorough and enhanced final proposal that is consistent with the understandings presented in the preceding sections.

2.3    Data Collection and Analysis

This research includes an extensive gathering of data from several data sources, enabling a multifaceted comprehension of the example company's training and upskilling environment. Three different rounds of data collecting yielded different insights into the collected data. In order to evaluate the current condition of training practises, Data Collection 1 comprised surveying, interviewing, and looking through internal documentation. Internal interviews and discussions were conducted as part of Data Collection 2 in order to create a preliminary proposal for improving technical proficiency inside the organisation. Finally, in order to test and improve the suggested training strategy, Data Collection 3 focused on written input and conversations with important managers and stakeholders. These data collection rounds helped to provide a thorough awareness of the gaps in the current practices and the creation of an all-encompassing strategy for efficient programmes for upskilling and training. The factors influencing the data collection are summarised in Figure 1, which lists the major variables and dimensions taken into account during these data-gathering phases.

Table 1. Details of Data collections 1-3 used in this study.

| | Participants / role | Data type | Topic, description | Date, length | Documented as |
|---|---|---|---|---|---|
| | **Data 1, Current state analysis (Section 4)** | | | | |
| **1** | Company Owner (Development manager) | Face-to-face Interview | Thesis introduction (goals, staff members to ask, etc)<br><br>Current state Analysis (based on CF elements), Part 1<br><br>Mapping CF with they used (based on CF elements), Part 1 | 06.11.2023 / 60 min<br><br>8.11.2023 / 30 min<br><br>10.11.2023 / several meetings + 2h interviews | Interview & Field notes<br><br>Interview & Field notes<br><br>Interview & Field notes |
| **2** | Project Manager/Tech Lead / Marketing Head (3 participants) | Face-to-face Interview | 1. Understand about how they decide which technology is important for an upcoming project<br>2. What are the way they used to upgrade their employee like online platforms/workshops or any other | 15.11.2023 / 60 min | Interview & Field notes |
| **3** | Employee (3 participants) | Face-to-face interviews | Does management provide extra perks to motivate employees to explore new domain. | 20.11.2023 30 min each | Interview & Field notes |
| **4** | Customer (3 participants) | Face-to-face interviews | Understand experience in working with the current organization | 22.11.2023 | Interview & Field notes |
| | **Data 2, for Proposal building (Section 5)** | | | | |
| **5** | Internal results (secondary data) | Discussion | creative brainstorming | | Internal report |
| **6** | Key stakeholders (primary data, same as Data 1) | Discussion | Co-creation | November 2023 / 90 min. | Interview & Field notes |
| | **Data 3, from Validation (section 6)** | | | | |
| **7** | Key stakeholders (3) | Final Presentation | Validation, evaluation, final improvements | November 2023 / 90 min. | Interview & Field notes |

Three primary techniques for gathering data were used in this study in order to assess and improve the case company's training and upskilling practises. First, in order to gather data, interviews with managers, employees, and important stakeholders were done as the main method. These on-location, semi-structured interviews allowed for in-person exchanges and ensured a depth of insights. The interview questions were carefully crafted ahead of time with the goal of covering a wide range of training and upskilling-related topics. Concurrently, talks with important stakeholders and managers brought fresh viewpoints, and written feedback gave thorough insights. The data gathered by all of these techniques was then subjected to theme/content analysis. This method made it possible to systematically identify themes, patterns, and important components of the textual material acquired through talks, interviews, and written feedback that provide a thorough comprehension of the example company's existing situation and the need for upskilling and training procedures.

Next, various data gathering techniques were used in this study to thoroughly assess the training system as it exists today and suggest improvements for the case company's digital and technological skill development. The main sources of data included internal papers, written feedback, interviews, and conversations. Qualitative insights regarding the company's training techniques and specific shortcomings were obtained through interviews and discussions with management, employees, and stakeholders. Thematic/content analysis was used to carefully examine the textual material gathered from these sources in order to identify recurrent themes, patterns, and important details. This analysis served as the basis for creating own approach that outlined the essential components required for efforts aimed at upskilling and training at the case company. Furthermore, the input received from managers and stakeholders confirmed and improved the original suggestions, finally resulting in the development of an extensive final proposal that is customised to meet the unique requirements of the business and fit within the established framework. Table 2 shows the internal documents used in this thesis.

Table 2. Internal documents used in the current state analysis, Data 1.

|  | Name of the document | Number of pages/other content | Description |
|---|---|---|---|
| A | Company Handbook | 28 pages | Policy of Company for Employee & Client |

| B | HR Records and Performance Appraisals | 12 Pages | Information regarding employee getting good appraisal after upskilling |
|---|---|---|---|
| C | Budget and Resource Allocation Report | 3 pages | Every year budget allocation for the employee upskilling and resource to. |
| D | Training Program Evaluations and Feedback | 5 pages | Evaluation criteria & feedback questions |

As seen from Table 2, the thesis utilized the HR department, management, and the tech leads and team members produced documents are the sources. They included the Company Handbook, HR Records, Performance Appraisals, Budget and Resource Allocation Reports, and Training Programme Evaluations and Feedback. Collaboration with pertinent parties was necessary to gain access to these internal papers, guaranteeing a thorough data gathering procedure. A comprehensive overview of the condition of employee training activities throughout the organisation was made possible by involving the varied viewpoints of HR, the technical team, and the leadership.

# 3  Existing knowledge and Best Practices in Employee Training and Upskilling for Digital Roles

The critical nature of employee training and upskilling has never been more obvious than it is in the dynamic and constantly changing business environment of today. Organizations understand the crucial role that an informed and talented staff plays in accomplishing their goals as they aim to be competitive and adaptable. This section discusses best practices and expertise currently in existence for upskilling and training employees. The section, first, goes into the fundamental ideas and modern techniques that support effective employee growth programs and then summarizes them into a conceptual framework that should guide the next steps in this thesis.

## 3.1  Role of Employee Training and Upskilling in Middle-Sized IT Companies

Middle-sized IT companies find themselves at a crucial crossroads in the constantly changing world of information technology, where innovation is the key to success. Employee upskilling and training are now essential for survival and growth due to the quick speed of technology advancements and increased competition. (Mvuyisi and Mbukanma, 2023.)

Companies have embraced digital transformation as a fundamental change to remain competitive in the continuously changing digital world. The link between technology acceptance, successful implementation, and long-term growth is training. In this section, we discuss the role that training may play in the process of digital transformation.

As a way to eradicate the skills gap that frequently results from initiatives for digital transformation, training is essential. Many businesses start their paths towards digital transformation without properly evaluating the workforce's current skill set. This may result in a mismatch between worker competencies and technological investments. Organisations may assist in guaranteeing that staff have the skills necessary to properly utilise new digital tools by developing training programmes that are designed to close this gap. Companies may future-proof their workforces and reduce the risk of talent shortages by investing in upskilling and reskilling projects. (Bygstad et al., 2022.)

Training equips employees with the knowledge and capabilities necessary to effectively utilise digital tools and systems, first and foremost. Employees who lack the proper training may feel overburdened and unwilling to change in a time when technology is

developing at an astonishing rate. Training programmes reduce this fear by giving employees the assurance they need to use digital technologies correctly. Training offers the crucial framework on which employees may grow their digital competencies, whether it's learning a new software platform, comprehending data analytics, or developing cybersecurity practices. (Bilyalova et al., 2020.)

In mid-sized IT companies, employee training and upskilling are of the highest priority. The ability to stay ahead of the curve is crucial for survival in the continuously changing tech industry of today. These businesses, which are frequently positioned between industry giants and up-and-coming start-ups, must utilize the potential of their employees through continual learning to be flexible and pertinent.

Additionally, the information technology (IT) industry is characterized by its dynamic nature, with technology advancing at an astonishing rate. What is innovative today could not possibly be innovative tomorrow. Employee training makes sure that the staff stays knowledgeable about the newest technology and processes, allowing them to provide clients with creative solutions. Middle-sized IT organizations in particular need to be adaptable because they frequently operate in specialized areas where specialization can provide them a competitive edge. (Susmitha, Kumari and Surekha, 2021)

Also, a project-based business strategy places the company's main priority on accomplishing projects for customers. In a project-based IT company, staff training and upskilling for digital roles in a project-based business means either completing or failing the projects. (Chanias et al., 2019.)

According to Wise (2014), employee training also improves the organization's general productivity and efficiency. Employees with the newest skills are better able to handle difficult projects with accuracy and efficiency. Customers will be satisfied, and the business will be more profitable. An increase in productivity can have a big impact on middle-sized IT companies where margins can be tight.

Upskilling and training also improve service quality in addition to productivity. Employees who have received proper training are more likely to produce high-quality work with fewer mistakes. This not only satisfies customers but also improves the company's standing in the market. For mid-sized IT companies looking to grow their client base, word-of-mouth referrals from happy customers can be invaluable. (Selwent, 2020)

Additionally, employee's requirements and cooperation expectations for training and upskilling can promote an innovative culture within the company. Employees who are allowed to explore new technology become more inventive problem solvers. They are more likely to develop novel answers to difficult problems. Innovation can be a crucial distinction in a crowded market for middle-scale IT businesses. (Walters and Rodriguez, 2017)

Employee upskilling and training can also have a good effect on morale. Employee job satisfaction increases when they see that their company cares about their professional development. As a result, the staff becomes more engaged and driven. Employees that feel appreciated are more likely to go above and beyond for the firm, which can increase customer happiness and increase profitability. (Susmitha, Kumari and Surekha, 2021)

According to Akour and Alenezi (2022), training also helps to increase employee happiness and engagement. Employers who invest in their employees' professional growth by providing proper training make them feel more appreciated. In turn, this promotes an awareness of commitments and efforts. Employees are more inclined to accept change and actively participate in the organisation's digital transformation activities when they have faith in their ability to successfully traverse the digital world. Training consequently promotes morale and retention rates in addition to improving technical abilities.

Thus, the significance of training in the digital transformation process cannot be underestimated. It is the spark that encourages a culture of continuous learning, closes skill gaps, boosts engagement, and protects against cyber dangers. (Zain, 2021) It also enables staff to adopt new technology. Organisations that prioritise comprehensive training programmes are better positioned to succeed in the middle of the changing digital world in a time when digital transformation is not an option but a requirement. The secret to success is the fusion of human ability and technology, and training is the key component that brings them together.

The result is that in mid-sized IT companies, the importance of employee training and upskilling cannot be overemphasized. It is not only a strategic imperative but also an investment in human capital. The success of these businesses depends on their capacity to adapt, develop, and offer high-quality services in a highly competitive and continuously changing environment. Through this, middle-sized IT companies can market themselves

as responsive, agile, and appealing to both customers and staff by learning and developing, assuring long-term growth and sustainability in the ever-changing IT sector. Thus, as discussed in this section, middle-scale IT organizations must invest in the constant growth of their staff as a lifeline to remain relevant, robust, and competitive in a market that tolerates no complacency in the digital age when the tech ecosystem is as demanding as it is dynamic.

## 3.2    Latest Theories and Approaches to Training and Upskilling for Digital Roles in IT

Companies and individuals alike need to remain competitive and relevant in the rapidly changing world of information technology (IT). The necessity for continual learning and upskilling in digital professions has never been more important as digital technologies continue to change sectors and reinvent how we operate. To fulfil this demand, the area of IT training and upskilling has seen a steady influx of theories and methods designed to provide people with the information and abilities they need to succeed in the digital age. In this section, we look into the most recent theories and innovative practices that are changing how we educate and upskill workers for the fast-paced IT industry. These cutting-edge methods are influencing everything from specific learning techniques to agile methodology.

First of all, it is necessary to clarify the companies´ level of contribution among other types of contributions into training and upskilling of employees. Shojaei et al. (2023) map these levels based on their study of BIM implementation in project delivery by leading UK construction businesses. Figure 2 shows the approach and levels of BIM-related skill training that was developed by (Shojaei, Oti-Sarpong and Burgess, 2023).

Figure 2. The approach and levels of BIM-related skill training that was developed by (Shojaei, Oti-Sarpong and Burgess, 2023).

As seen from Figure 2, the company´s level is mapped next above the individual level of particular employees to invest into own professional level, and thus shows a big role of both, companies and individuals in the upskilling efforts. In doing so, Shojaei et al. (2023) have also demonstrated the various elements that play a role in equipping the workforce with the necessary knowledge and skills. Findings that contributed to this discovery came from comprehensive qualitative interviews with BIM experts (Head of BIM, Head of Digital Transformation, BIM Manager, and BIM coordinator) from six top UK construction companies that use BIM on their projects. These interviews were supplemented with case studies of how two major contractors took on and utilised BIM. They propose to focus on providing technical skills to the workers or implementing BIM training into a construction education programme. This study emphasised the importance of staff upskilling for construction organisations in their transition from traditional working techniques to modern practises utilising BIM. (Shojaei, Oti-Sarpong and Burgess, 2023)

This study has given us a foundation for understanding the numerous forces that shape the digital learning upskilling. It also offers a strategic viewpoint on how to use digital learning systems (both proprietary and open systems) effectively to improve the efficacy of learning and development.

Moving forward from this foundation, a few selected theories discussed below present a view how upskilling can be done by companies in practice.

First, Sousa and Rocha (2019) suggest an optional certification and rewards-based strategy to encourage digital fluency among staff members. As they report, this approach produced outstanding results by recognising the value of digital skills in the rapidly changing business environment and developing a culture where employees perceived personal progress connected to digital proficiency. Figure 3 shows the elements of an employee training program by (Sousa and Rocha, 2019).

## The Elements of a Successful Employee-Training Program

Continuous learning marks a new paradigm for education and career growth: The days when employees had one job and a fixed skill set for a whole career are gone. Companies that successfully upskill their workforce follow six practices.

1. Set a companywide goal for training.

2. Design learning opportunities that include all functional roles.

3. Prioritize virtual delivery, making learning scalable and accessible to everyone.

4. Motivate people to learn through campaigns, awards, and incentives.

5. Make sure managers understand the offerings so that they can effectively guide and inspire employees.

6. Encourage employees to participate in projects with digital components and hands-on learning opportunities.

Figure 3. Elements of an employee training program by (Sousa and Rocha, 2019).

As shown in Figure 3, this approach suggests sixth steps. First by setting goals of the company after that Second step shows design and learning opportunities which includes all functional roles. The third step shows prioritising virtual learning and making it accessible to each employee. The fourth step involves motivating employees through rewards Fifth step is to ensure that the manager keeps a record and encourages employees to upskill. The last sixth step indicates encouraging employees for hands-on learning opportunities. Atos proved that investing in its workforce's digital capabilities not

only benefited individual employees but also fuelled the company's overall success with over 70,000 employees completing their digital certifications in just three years and revenue surging to nearly $13 billion during this time. This example offers a striking illustration of how proactive upskilling initiatives may pay significant dividends for businesses in an increasingly digital world. (Sousa and Rocha, 2019.)

Second, another approach is illustrated in creating a Common Framework for Digital Skills in Canada´s initiative, which started in October 2022 and was finished in the spring of 2023. The project had several tasks divided into phases, starting with an environmental assessment and ending with the creation of a report and toolkit as shown in Figure 4. ('recommendations_report.pdf', no date)
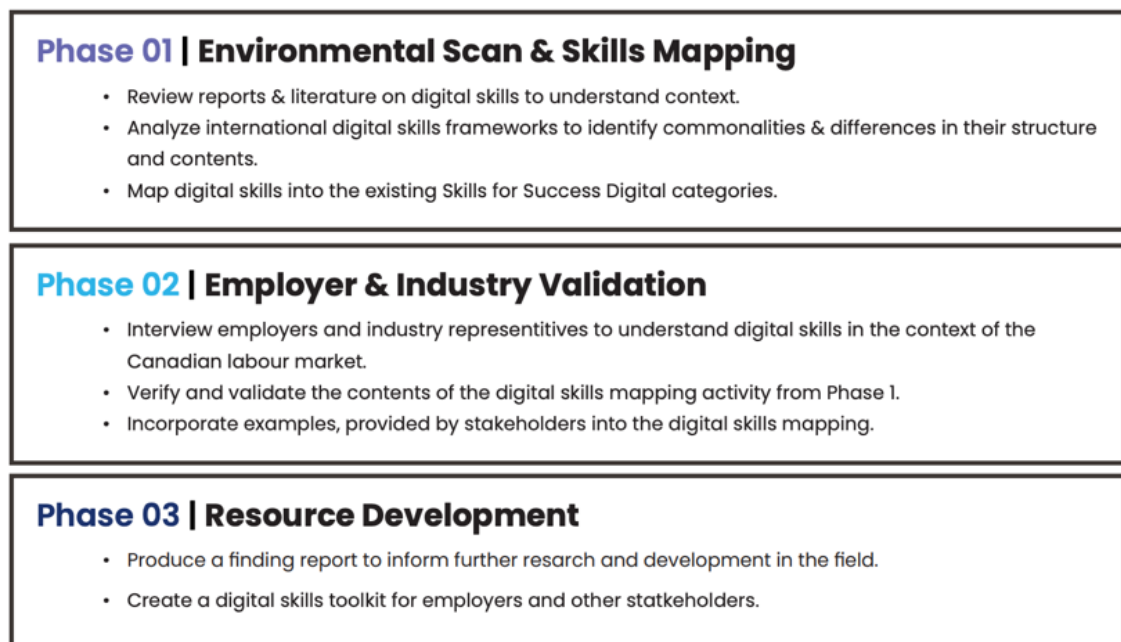


**Phase 01 | Environmental Scan & Skills Mapping**
- Review reports & literature on digital skills to understand context.
- Analyze international digital skills frameworks to identify commonalities & differences in their structure and contents.
- Map digital skills into the existing Skills for Success Digital categories.

**Phase 02 | Employer & Industry Validation**
- Interview employers and industry representitives to understand digital skills in the context of the Canadian labour market.
- Verify and validate the contents of the digital skills mapping activity from Phase 1.
- Incorporate examples, provided by stakeholders into the digital skills mapping.

**Phase 03 | Resource Development**
- Produce a finding report to inform further resarch and development in the field.
- Create a digital skills toolkit for employers and other statkeholders.

Figure 4. Steps in upskilling firms´ personnel in Canadian "Skills for Success" approach ('recommendations_report.pdf', Krista Medhurst Lucy Altrows, 2023).

As shown in Figure 4, this approach suggests three phases. Phase 1's primary goal was to investigate the structure and classification of digital skills into broad competency frameworks. Subsequent identification of typical descriptors for tasks involving the digital abilities of employees. Acknowledging the key themes in the frameworks and research on the differentiation, complexity, and application of digital skills in the labour market, as well as offering examples and background information to guide the conversation with important industry stakeholders (Phase 2 of the study).

Phase 2 comprised interviewing organisational executives from in-demand sectors of the Canadian economy through key informant interviews. To confirm and validate the data generated during the skills mapping process (Phase 1), stakeholder discussions were conducted. Later, several instances of the application of digital abilities in the workplace were gathered. To provide suggestions for the future development of digital skills resources, it is necessary to comprehend the difficulties employers have concerning digital skills. Twenty people took part in this project, which targeted industries like manufacturing, construction, logistics, hospitality, health and human services, and resource production. This strategy made it easier to collect comparable data while letting stakeholders provide the insights and experiences they thought were most important for the accomplishment of the task.

In Phase 3 of the project, resources and tools were developed to help the company's workers further develop and apply the "Skills for Success" concept. To meet the company's objectives and demands, resource allocation and development were directed by a deeper understanding of the abilities that are necessary to make up the digital skills domain.

This project demonstrated the abilities required to update and improve digital knowledge and the tools that can be used for learning. Figure 3 shows the tools based on use information- sharing platforms, transaction online and use of existing skills and knowledge to learn and apply advanced digital skills.

| Use Information-Sharing Platforms | Transact Online | Use existing skills and knowledge to learn and apply new advanced digital skills |
|---|---|---|
| Use online meeting tools (i.e., Zoom, MS Teams) to meet, share information, and collaborate. | Complete online forms such as applications or reports. | Access online tutorials and forums to solve problems and improve digital skills. |
| Share documents and files using online sharing platforms (i.e., Google Drive). | Create accounts and subscribe to online services (i.e., icloud, government accounts, etc.). | Choose appropriate online learning resources to maintain digital skills. |
| Set permissions and give access to shared documents. | Use online financial services and purchasing platforms. | Adjust and customize digital environments to reflect personal needs. |
| | Interact with online support services (i.e., virtual assistant, chatbot). | Recognize where improvements to digital skills are required. |
| | | Support others to acquire digital skills. |

Figure 5. Tools and key elements for learning new advanced digital abilities ('recommendations_report.pdf', Krista Medhurst Lucy Altrows, 2023).

As shown in Figure 5, this approach suggests to improve digital competency and take part in training, professional development, and personal improvement, by utilizing a wide range of tools and building on already acquired digital abilities. Thus, this approach suggests the three phases of learning for employees of the company to upskill and reskill. ('recommendations_report.pdf', Krista Medhurst Lucy Altrows, 2023)

Third, according to the long-term success of small and medium-sized enterprises (SMEs) depends on building a strong ecosystem for reskilling and upskilling people. Figure 4 depicts the steps to be taken by a company´s employees for upskilling and reskilling within this approach. ('WEF_EGW_White_Paper_Reskilling.pdf', no date)

| Key Pathways | Key Public Sector Actions | Key Private Sector Actions | Other Stakeholder Actions |
|---|---|---|---|
| **Take stock of and recognize existing skills** | Develop qualification frameworks to recognize formal and informal skills | Move towards skills-based recruitment and work to develop relevant skills assessments for their companies | Unions and professional associations can conduct skills assessments<br><br>International organizations can assist with skill measurement and international benchmarking |
| **Understand skills demand** | Lead the governance of skills anticipation systems, and organize skills councils and inter-ministerial working groups and industry-specific strategic foresight groups for evaluating skills demand<br><br>Conduct employer surveys, put in place labour demand forecasting models based on previous economic performance and needs, coordinate industry specific strategic foresight groups, and gather real-time information through big data analysis | Actively participate in skills councils, data sharing, industry strategic foresight groups and business councils | Unions and professional associations can be active players in skills assessment, setting up learning committees, and feeding this information into skills anticipation systems |
| **Adopt the right mix of financing instruments** | Allocate sufficient funds towards adult learning, including through longer term instruments<br><br>Co-fund adult learning opportunities and create financial incentives for burden-sharing on the part of businesses and individuals through diverse instruments<br><br>Regulate the minimum provision of training funds and time allocation for training<br><br>Allocate additional resources to SMEs, lower-skilled learners, older learners and other vulnerable groups less likely to benefit from professional training opportunities | Invest in human capital development both through in-house training and in coordination with universities and other educators<br><br>Give employees a stake in their learning by deducting training levies from their payroll or matching contributions towards training and professional development courses | Involve learners in the investment towards their learning opportunities through co-funded activities and financial matching schemes<br><br>International organizations are well placed to study the impacts of diverse financing models and instruments and share good practices |
| **Build and sustain motivation for adult learning through active labour market policies and accessible resources** | Build cohesive strategies that incorporate training offerings, labour market information as well as career guidance services<br><br>Ensure that government actions are coordinated through working groups or intermediary institutions to effectively link all relevant resources to empower citizens and provide one-stop shops for their employment and professional development needs | Build learning into work performance assessment of employees<br><br>Incorporate career guidance and advancement incentives for reskilling and upskilling efforts<br><br>Link training opportunities to new roles that will directly apply newly acquired skills<br><br>Use gamification to enhance motivation and participation in self-paced modular courses | Unions, professional associations and other community groups can be a strong motivating factor for participating in adult education programs |

| Key Pathways | Key Public Sector Actions | Key Private Sector Actions | Other Stakeholder Actions |
|---|---|---|---|
| Create shorter learning modules that foster continued learning | Redesign education courses to offer more short-term and highly specific courses aligned with specific employment opportunities | Create modular learning programs that allow for rapid reskilling as skill demand evolves<br><br>Partner with universities and other institutions to create the relevant programs and nanodegrees | Create targeted training opportunities and coordinate the provision of basic education with public institutions |
| Determine the role of different stakeholders | Governments, policymakers and public intermediary institutions can: lead the governance of the lifelong learning system; set curricula and standards and create frameworks for skills recognition; ensure the quality of adult education programs; secure access to learning technologies; promote equal access to learning opportunities for all; find collaborative funding solutions and governing incentives; coordinate social safety nets; and lead skills anticipation activities | Create opportunities for reskilling and upskilling within companies, across sector alliances and business councils, and throughout supply chains<br><br>Co-finance professional development opportunities for employees and allot adequate resources for creating a culture of continuous learning<br><br>Partner with universities and other education actors to ensure access to a suitable talent pipeline with the right blend of skills<br><br>Support skills anticipation systems by providing data to employer surveys and actively participating in industry foresight groups | Unions can work in coordination with other stakeholders to identify skill needs, inform workers about training opportunities, support apprenticeships, and provide targeted trainings when needed |
| Recognize and promote on-the-job training opportunities and maximize informal learning opportunities | Create financial incentives and programmes for facilitating adult apprenticeships<br><br>Build training infrastructure that brings together educators and companies in innovation labs and joint research facilities | Put in place job rotation programs, adult apprenticeships and other opportunities to acquire new skills in the workplace<br><br>Work to create a learning enabling corporate culture that rewards individual innovation and learning | Help inform workers about training opportunities and support learning activities through peer support networks |
| Reach those who need it most–SMEs, lower-skilled workers and older workers | Launch motivational campaigns, provide financing and resources to vulnerable groups within the workforce, and provide targeted programs for low skilled and older workers, gig economy contract workers and SMEs | Put in place mid-career review and other mechanisms for actively engaging the development of older workers<br><br>Create direct opportunities for knowledge-sharing and intergenerational learning within the workplace<br><br>Build consortia of SMEs to cater to their training needs and build peer support networks | Unions can actively support firms and governments in the provision of inclusive programs for basic skills training<br><br>Civil society can also create peer networks and administer programs for silver workforce participants<br><br>Community learning centers, universities, and other education providers at local and regional levels can work with businesses and governments to coordinate courses to best meet the needs of diverse learners |
| Customized teaching for adults | Set high standards and work to professionalize adult education by putting in place rigorous training and certification processes for adult educators<br><br>Invest in further research about effective adult learning strategies and ensure this research is applied in government programmes | Design training to be practical, hands-on and directly applicable in the workplace<br><br>Adapt the format to the skill levels of diverse learners | Unions can adapt their training formats to best suit adult learning styles with direct applications in professional settings |

Figure 6 . Steps to be taken by a company´s employees for upskilling and reskilling. ('WEF_EGW_White_Paper_Reskilling.pdf', no date)

As shown in Figure 6, this ecosystem consists of readily available resources, assistance from the government, and an ongoing learning culture. According to this approach, to empower their workers, SMEs can make use of accessible training resources, mentorship programmes, and online courses. Financial incentives and regulatory assistance are two ways that government-backed active labour market policies can promote skill development. In addition, fostering an environment at work where learning is valued and rewarded increases employee engagement and motivation. Through this comprehensive ecosystem, SMEs can give their staff the tools they need to grow in the cutthroat business world and adapt to changing industry trends. Fostering adaptability

and competitiveness within SMEs requires a well-established environment for reskilling and upskilling. SMEs may equip their staff to handle the demands of a business landscape that is changing quickly by combining easily accessible tools, government backing, and a culture of continuous learning. This deliberate investment in skill development benefits individual workers as well as SMEs' long-term survival and success in the fast-paced economy of today. ('WEF_EGW_White_Paper_Reskilling.pdf', no date)

Fourth, another interesting approach is represented by the "70:20:10 framework" for on-the-job learning (Hiremath, Mohapatra and Paila, 2021a). Figure 7 shows the foundation of 70:20:10 is the idea that experience, experimentation, and reflection at work account for 70% of learning. 20% of learning comes from collaborating with peers, superiors, subordinates, and other people. Finally, the planned learning solutions and formal interventions account for 10% of learning.



**70**
Examples of learning by working:
- Problem solving
- Challenging tasks
- Other roles and responsibilities
- Auditing/reviewing
- Innovation
- Reflection

**20**
Examples of learning by working together:
- Coaching colleagues in the workplace
- Collaboration and continuous improvement
- Giving and receiving feedback
- Learning in networks
- Action learning
- After-action reviews

**10**
Examples of learning by formal intervention
- Courses
- Modules
- Workshops/masterclasses
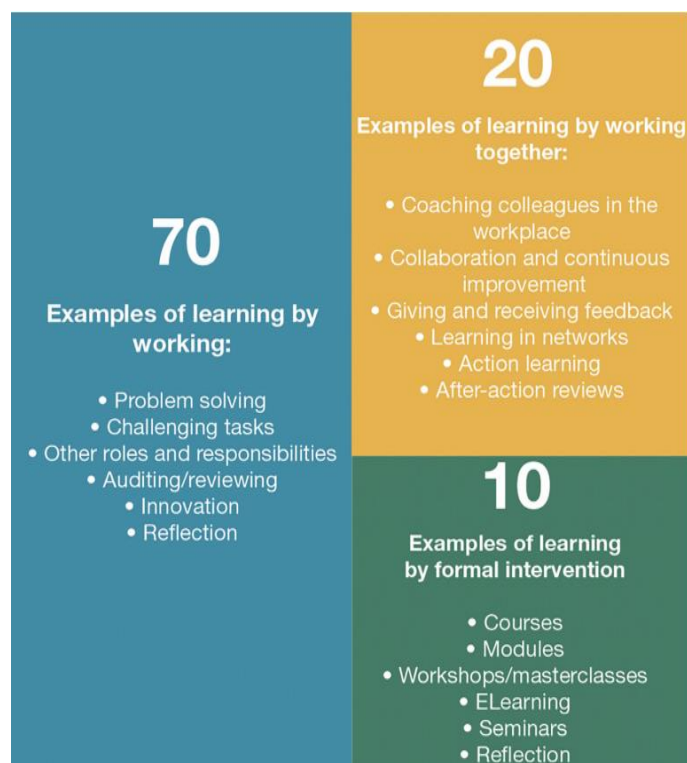- ELearning
- Seminars
- Reflection

Figure 7. The "70:20:10 framework" for on-the-job learning (Hiremath, Mohapatra and Paila, 2021a).

As shown in Figure 7, investing in training tools and learning platforms also improves learning via formal intervention. In case these are virtual tools and platforms, it also enables skill acquisition regardless of physical location and guaranteeing that the

employees´ learning is flexible in the face of changing environments. (Hiremath, Mohapatra and Paila, 2021a)

Moreover, this approach also stresses adopting a continuous learning culture that stimulates creativity and pushes staff members to pursue information on their own. Figure 8 shows the place of the Learning and Performance focus the company can adopt for employees (Hiremath, Mohapatra and Paila, 2021a).
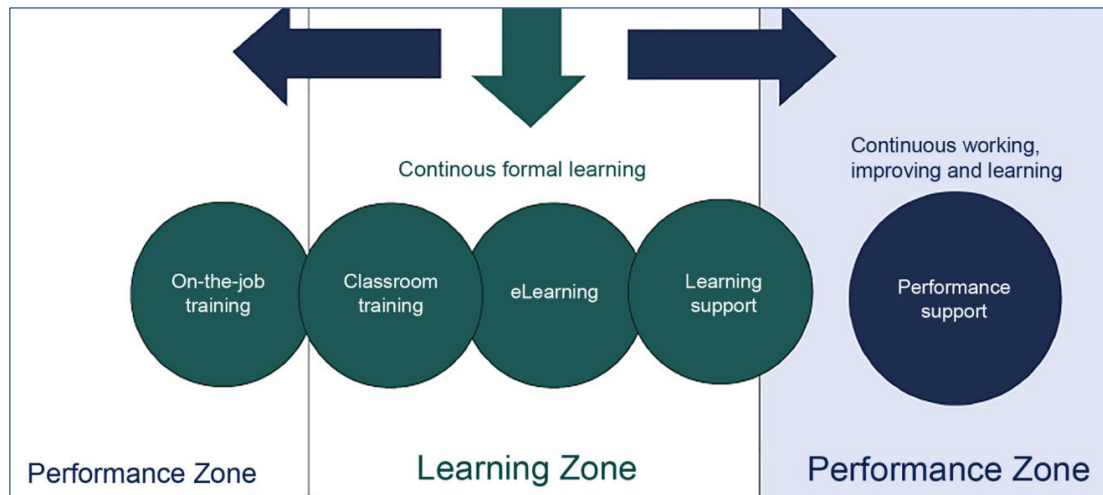


Figure 8 . The Learning and Performance focus in employees´ upskilling (Hiremath, Mohapatra and Paila, 2021a).

Thus, a personalized learning combining the on-the job training, supported by formal learning and continues working, can be given top priority in the company's learning and development strategy, allowing employees to customise skill development to meeting their career goals. (Hiremath, Mohapatra and Paila, 2021a)

As (Hiremath, Mohapatra and Paila, 2021b) have indicated, there are certain crucial aspects for creating engaged and active learning. Figure 9 shows the crucial aspects for creating engaged and active learning (Hiremath, Mohapatra and Paila, 2021b).

| Crucial aspects for creating engaged and active learning (Hiremath, Mohapatra and Paila, 2021b) |
| --- |
| 1. To look for fresh ways to include real-time learning and knowledge/skill application into work processes/job flow.<br><br>2. To personalize/customize the learning so that it is very beneficial to a particular employee/job function and to have it given in a manner that is convenient for the employee.<br><br>3. Create methods that seamlessly incorporate learning into work, teams, and individuals<br><br>4. To enhance and develop a deeper learning culture in corporations and organisations, one option is to introduce a culture that rewards acquiring new skills and a work environment that promotes career advancement.<br><br>5. Learning Experience Platforms (LXPs) are among the newest and perhaps most trends in learning and development that are prevalent as well as the new trend in learning technology that improves engagement among learners. |

Figure 9. Crucial aspects for creating engaged and active learning (Hiremath, Mohapatra and Paila, 2021b).

Finally, (Brunetti *et al.*, 2020) discuss the methods that can be used to successfully deal with the difficulties of the digital transition, on the example of the Tyrol-Veneto macro-region. This study suggests designing a training program for employees based on their *requirements* and *needs* specifically suggesting that a macro-regional policy for digital transformation should work in three directions: (1) to build infrastructure and technology, (2) to construct digital ecosystems, and (3) to foster digital culture and skills. These tactics could be applied to other areas and used as a model for local, market, and commercial development.

The literature study sheds light on how workforce development is changing in the context of SMEs in the IT industry and employee training and upskilling for digital positions. This investigation reveals a complex framework that includes the importance of digital capabilities, the dynamics of skill gaps, and the critical function of customised training programmes in preparing SMEs to prosper in the face of technological innovation. Through the integration of various viewpoints, ideas, and optimal methodologies, this

analysis establishes the foundation for an all-encompassing comprehension of efficacious approaches to augment workforce competencies, stimulate creativity, and propel enduring expansion in small and medium-sized IT enterprises.

## 3.3 Identifying Key Elements for Conducting the Training and Upskilling for Digital Roles in IT

A thorough plan is required to identify the essential components for effective training and upskilling for digital IT professionals. This section discusses these possible steps.

### 3.3.1 Evaluating the Needs for Employee Upskilling: Training Needs Analysis (TNA)

A methodical process known as a "training needs analysis" (TNA) is used by companies to determine and assess the gaps between the employees' present knowledge, skills, and abilities and the desired competencies needed to meet particular business objectives. To identify the training programmes, courses, or interventions required to close those gaps, TNA entails a thorough assessment of the training needs of the workforce. This analysis often involves gathering information through surveys, interviews, performance reviews, and other techniques to identify any areas where employees could be lacking in the requisite expertise. Based on the findings from a TNA customised training and development activities are designed and implemented in order to improve employee performance, productivity, and overall organisational effectiveness.

*A thorough Training Needs Analysis (TNA)* is not only a best practice but a strategic need in the dynamic world of project-based enterprises. (Huka and KariukiMbugua, no date) The competency of the team is crucial to the success of any project, and a well-conducted TNA guarantee that staff has the abilities necessary to produce greatness. This section examines TNA's crucial position in the project sector. Organisations can identify the specific skill shortages in their employees by performing a TNA. The ability to deploy resources wisely, whether via the use of training programmes, the hire of specialised personnel, or the reorganisation of project teams, is made possible by this clarity. (Li, 2014.)

The key elements of TNA include a precise assessment of existing employee skills, the identification of specific organisational goals and objectives, and the identification of skill gaps between intended and existing skill sets. To gather information on the needs for

both individual and team training, data collection techniques like surveys, interviews, and performance assessments are used. To achieve a comprehensive understanding of training needs, it is also essential to take into account feedback from stakeholders, including employees, managers, and employees. Once these needs have been recognised, prioritised, and analysed, organisations can create specialised training programmes and plans to solve skill gaps and synchronise staff development with their strategic goals. In a company environment that is changing quickly, regular examination and revision of TNA findings are crucial to maintaining their relevance (Booyens, Motala and Ngandu, 2020.)

These procedures are typically listed for conducting a training needs analysis (TNA) (Booyens, Motala and Ngandu, 2020.)

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Procedures in conducting a training needs analysis (TNA) (Booyens, Motala and Ngandu, 2020.)

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1. Clearly define the organization's aims and objectives to identify the knowledge, abilities, and abilities required to attain them.

2. Data is gathered To find out where there are gaps between employees' present skills and desired skills, collect data using surveys, interviews, performance reviews, and observations.

3. Set Priorities to Examine the data gathered to set Training Needs Priority based on Urgency and Impact on Business Results.

4. To achieve a thorough understanding of training needs, seek input from staff members, managers, and other stakeholders.

5. Come up with a strategy including particular training courses and tactics to fill in the identified skill shortages.

6. Put the training activities into action and frequently assess their efficacy to make the necessary modifications and adjustments.

7. TNA is a process that is constantly being reviewed and updated to ensure that training initiatives are in line with changing corporate objectives and personnel requirements.

Figure 10 . Procedures in conducting a training needs analysis (TNA) (Booyens, Motala and Ngandu, 2020.)

TNA helps in the improvement of company and staff knowledge, skills, and capacities for need assessment. The TNA outcome acts as a roadmap for the company to strategically plan and carry out training and development efforts to increase employee skills and competencies, which ultimately helps to improve performance and achieve business goals. Once the necessity for training has been determined, the training's goals need to be established (Habib, no date).

Importantly, organisations must keep in mind that their training programmes continue to be aligned with project objectives by routinely performing TNAs throughout the project lifecycle. In a fast-paced project environment, where adaptation is frequently the key to success, this dynamic strategy enables firms to remain nimble and responsive. (Blanchard, 2023). In the area of project controlling business, even a tiny skills gap can have a domino effect, resulting in delays, cost overruns, and unhappy clients (Huhta, 2010). In project-based enterprises where reputations are on the line, this risk-aware strategy improves project predictability and resilience. It remains flexible and responsive to changing market trends.

Summing up, an important roadmap for firms to match their training initiatives with strategic goals and personnel development requirements is provided by training needs analysis (TNA). The TNA gives companies the knowledge they need to plan and carry out efficient training programmes by methodically identifying skill gaps, identifying training needs, and providing specific recommendations. In addition to improving employee competencies, this technique also promotes overall organisational success. Additionally, the TNA's flexibility makes it a powerful instrument for continuous improvement, enabling organisations to respond to new possibilities and problems in the fast-paced business environment of today.

### 3.3.2 Planning the Training Programs for SMEs in IT

The complexity of the skills to be acquired, an individual's past knowledge and experience, the accessibility of appropriate training materials, and the necessity of the skill upgrade are just a few of the many variables that must be taken into account when planning the programs and estimating the time needed to upgrade abilities. To plan and predict the length, a detailed examination is essential. For example, short courses or concentrated training may enable the acquisition of some talents relatively rapidly, although longer-term commitments may be required for the acquisition of more comprehensive or difficult skills.

Following the identification of skill shortages, personalised learning programmes can be developed to enable employees to pick up new abilities at their speed. (Zapata-Cantú, 2022)  Employers can also promote a culture of continual learning by giving employees access to a range of educational tools, such as workshops, mentoring programmes, and online courses.

According to (Blanchard, 2023), for training programs to promote active learning and increase participant involvement, they should take into account various learning styles and utilise a variety of instructional techniques and technological advancements. It means businesses should spend money on technology that supports learning and development, such as learning management systems and tools for analysing data to determine the effectiveness of upskilling initiatives.

Furthermore, tracking progress and making required modifications to the upskilling programmes depend on regular feedback and performance reviews. (Jain, Mishra and Goyal, 2022) To track progress and make required modifications, the training programme should include regular evaluation and feedback systems. It is critical that HR, management, and workers work together to ensure that upskilling initiatives continue to be useful and successful. (Bin Othayman *et al.*, 2022) gives a study that shows training sessions need to be evaluated in between upskilling to keep a record of the milestone achieved. Regular progress reviews and feedback loops during the training process can also help improve time estimations and guarantee that learners are on track to complete their skill-upgrading objectives in the intended amount of time. In the end, a pragmatic and adaptable method of determining the amount of time needed for successful skill development without placing too much pressure on learners.

Thus, in order to improve the competitiveness and adaptability of Small and Medium-sized Enterprises (SMEs) in the dynamic business landscape, upskilling them requires a comprehensive training programme that includes technical, managerial, and soft skills. Here below, there are a few approaches mentioned which can be beneficial to SMEs in different ways.

Approach by (Casalino et al., 2019) for SMEs focuses on content creation in two ways: a more management approach and a more technical one. According to this approach, the creation and design of organised training materials for e-learning delivery must be portable and self-contained. An instructional design model outlines the processes that direct the creation of learning materials. Figure 11 below gives a model which might be helpful to SMEs for creating an upskilling model.

<div style="border:1px solid;">

Different types of upskilling models (Casalino et al., 2019)

1. Modularity: Because each module was created separately, the programme could be easily modified. One benefit of implementing a modular learning programme is the ease with which the training materials may be customised to meet the unique requirements

2. Competency-based learning: this method lets users progress by focusing on their capacity to learn a skill or competency at their own speed, independent of the setting. This approach can produce more effective participant outcomes since it is designed to accommodate a range of learning capacities

3. Activity-based: education has been shown to be more successful in helping students comprehend and apply the material when compared to traditional teaching methods, particularly when the training has a multidisciplinary foundation

4. Participant-centred: this style of instruction moves the emphasis of the lesson from the instructor to the students. Among these techniques are active learning, cooperative learning, inductive teaching, and learning; output-oriented: this kind of instruction focuses on the employee learning outcomes. Competency orientation and education standards (accessible mostly through formal learning) could be used for accomplishing it.

</div>

Figure 11 . Shows Different types of upskilling models (Casalino et al., 2019.)

(Donner *et al.*, 2020) claim that three general training modalities are used in platform-led upskilling: (1) in-workflow training moments, (2) online training, and (3) interpersonal training. Each is based on unique customs and depends on various professionals striving to enhance them. Not every platform employs all three strategies, and when it does, various teams inside the organisation might take the lead in distinct ways. Figure 12 shows Three general types of training for upskilling (Donner *et al.*, 2020.)

| Three general types of training for upskilling (Donner et al., 2020.) |
|---|
| 1. Interpersonal training: The development of abilities including active listening, effective communication, empathy, dispute resolution, teamwork, leadership, and fostering positive relationships are frequently covered in interpersonal training. Enhancing a person's capacity to engage with others, comprehend their viewpoints, and communicate concepts and information clearly is the goal. Professionals in a broad range of responsibilities within an organisation, including managers and leaders who must promote a healthy and productive work environment, might benefit from this kind of training. |
| 2. Online training: This kind of upskilling makes use of digital platforms to give learners instructional content, such as websites, webinars, video tutorials, e-learning modules, and online courses. Online upskilling has many benefits, including scheduling flexibility, accessibility from any location with an internet connection, a large selection of subject selections, and frequently low cost. In the current digital era, it has grown in popularity, particularly among professionals and those trying to adjust to shifting job demands or stay competitive in their employment. |

Figure 12 . Three general types of training for upskilling (Donner et al., 2020.)

These types of training are based on a newly emerging field of user-experience design that facilitates learning while working. Organisations can ensure that their workforce is capable of completing tasks effectively and in accordance with the company's objectives by offering workflow training. This kind of training is crucial for upskilling because it gives workers the abilities and information needed to prosper in a corporate environment that is changing quickly (Donner *et al.*, 2020)

By putting these best practices into practice, businesses may enable their employees to respond to shifting needs and promote sustainable growth.

### 3.3.3   Delivering Training Programs for SMEs in IT

When it comes to staff training and upskilling for digital jobs in project business, middle-scale IT companies encounter a specific set of difficulties. (Acton and Golden, 2003). A number of training delivery techniques may be used to solve these issues in an efficient manner.

First, *Instructor-led training (ILT)* enables employees to take part in real-time, in-person training sessions, is one often utilised technique. (Coppola and Myre, 2002) ILT may be especially useful for teaching complicated technical skills and project-specific training, making sure that staff members are well-equipped to contribute to the success of the project. This strategy can be advantageous for medium-sized IT businesses because it encourages direct connection between trainers and students, resulting in a more individualised learning environment.

Second, *E-learning* can be a cost-effective solution for IT organisations on a tight budget since it eliminates the need for physical equipment and travel costs, making it the best option for upskilling geographically scattered employees. Employees can authenticate their knowledge and abilities through the certification programmes that are offered by several e-learning platforms.(Strother, 2002)

Third, *peer learning and mentoring*  (O'Neil and Marsick, 2009) can be yet another beneficial way for medium-sized IT companies to give training. These initiatives promote staff cooperation and information exchange. Less experienced team members might benefit from the mentoring of more seasoned team members, who can offer advice, share best practices, and guide them through the complexities of digital roles in project management. (Núñez-Andrés *et al.*, 2021) Peer learning and mentoring can help middle-sized IT organisations achieve their goals of completing successful IT projects by not just accelerating skill development but also by fostering a sense of camaraderie and collaboration inside the organisation.

In the end, by employing *a variety* of training delivery techniques, middle-scale IT companies may efficiently fulfil their employees' training and upskilling demands for digital positions in project business. These techniques have to be customised to the organisation's particular requirements and the competencies needed for a job well done. For middle-sized IT businesses aiming to succeed in today's cutthroat digital environment, investing in the professional development of staff is crucial. This may be

done through instructor-led training, e-learning platforms, hands-on workshops, or peer learning.

In summary, the analysis of the literature on employee training and upskilling for digital positions in SMEs in the IT sector offers insightful information about how skill development is changing. The necessity of ongoing education and training in digital capabilities for small and medium-sized businesses is evident from a number of academic studies. In order to address the ever-changing demands of the IT business, the synthesised literature emphasises the importance of customised training programmes, thorough skill mapping, and a proactive approach to upskilling. Additionally, the research highlights how important it is for SMEs to promote a culture of ongoing learning so that workers can adjust to and prosper in a constantly changing digital world. This analysis lays the groundwork for more research and real-world applications, demonstrating the critical significance of strategic programmes of training designed especially for SMEs in the IT industry.

### 3.3.4   Measuring the Impact of Training on SMEs in IT

Finally, assessing the effects of training makes a complex task that is essential to increasing organisational effectiveness and competitiveness, especially in mid-sized IT enterprises. These businesses frequently operate in highly technologically advanced environments where an ongoing commitment to employee skill development is required due to the quick development of IT tools and techniques.

A.   Key performance Indicators (KPIs) for Training Success

Key performance indicators (KPIs) (Parmenter, 2015)  are crucial in determining the effectiveness of staff training and upskilling projects. First of all, the "Skills Gap Reduction Rate" is a crucial KPI for training performance. This indicator assesses how well training initiatives have helped employees in digital positions close the skills gap. A greater decrease rate shows that the workforce's capabilities are being matched with the changing requirements of project-based IT initiatives. This KPI is essential because it has a direct influence on project execution and quality, allowing businesses to provide customers with better services and products.

As a second important KPI, "Project Performance Enhancement" is used. (Konsta and Plomaritou, 2012) assesses the impact of training activities on project outcomes. Successful training programmes are characterised by shorter project deadlines, lower mistake rates, and higher customer satisfaction. This KPI highlights the direct connection between employee upskilling and the bottom line of the business since more trained teams can carry out projects more quickly and provide outputs of higher quality. (Marr, 2012)

Particularly in middle-sized IT companies involved in project-based industries need to be sure that their efforts in training are yielding real business benefits and competitive advantages in the project-based environment by monitoring project performance enhancement KPIs. In the end, these KPIs assist organisations in assessing the success of their training initiatives and in formulating data-driven choices to constantly enhance staff development plans in the fast-paced world of digital project business.

B. Assessing the return on Investment (ROI) of Training

Assessing the return on investment also requires tracking the development of new technical skills, certifications, and the retention of important people after training. The perceived benefit of training activities can also be qualitatively revealed via employee feedback and engagement surveys.

Programmes for training and upskilling give employees the newest skills and information needed to succeed in digital positions. (Dadd and Hinton, 2022) However, it can be difficult to calculate the ROI of these projects, though. Companies must take into account both short-term and long-term effects to achieve this efficiently. How soon employees can apply their new abilities to projects, leading to enhanced project delivery and customer satisfaction, may be used to measure the short-term impact of training. (Ozkeser, 2019) It becomes necessary to encourage employees for training sessions by providing them with gifts or appraisals. It is possible to gauge long-term ROI by monitoring the Promotions, more responsibility and the potential to help the business expand are all examples of how skilled individuals may advance in their careers. Companies should also think about keeping competent workers on board since training investments may boost employee loyalty and lower attrition, which eventually reduces the need for recruiting and onboarding expenses.

For middle-sized IT organisations that run project-based operations, determining the Return on Investment (ROI) of training for employee upskilling in digital jobs is a crucial task. For these businesses to remain competitive in the quick-paced world of technology, staying ahead of the curve is essential.

In conclusion, SMEs have experienced a transformation, reflecting changes in technology, worker demographics, and educational approaches. Therefore, businesses looking to maximize employee potential while navigating the intricacies of the modern professional landscape must comprehend the fundamentals of effective training and upskilling in this era of fast change. It is impossible to overestimate the crucial significance of staff training and upskilling for digital jobs in middle-scale IT organisations within the context of project business. These organisations are advised to adapt to stay competitive and relevant as the technology landscape continues to change at an unprecedented rate. A thorough analysis of the body of research shows that funding employees' ongoing development is not just a strategic benefit but also a necessary survival strategy. Either through external courses, mentorship programmes, or on-the-job training, the company's ethos might be centred around its dedication to developing digital talent. By doing this, these mid-sized IT firms may take advantage of the workforce's revolutionary potential, which will eventually promote innovation and long-term success in progressively focused digital platforms in the workplace.

3.4    Conceptual Framework of this Thesis

Figure 13 shows the conceptual framework created from the existing latest theories.
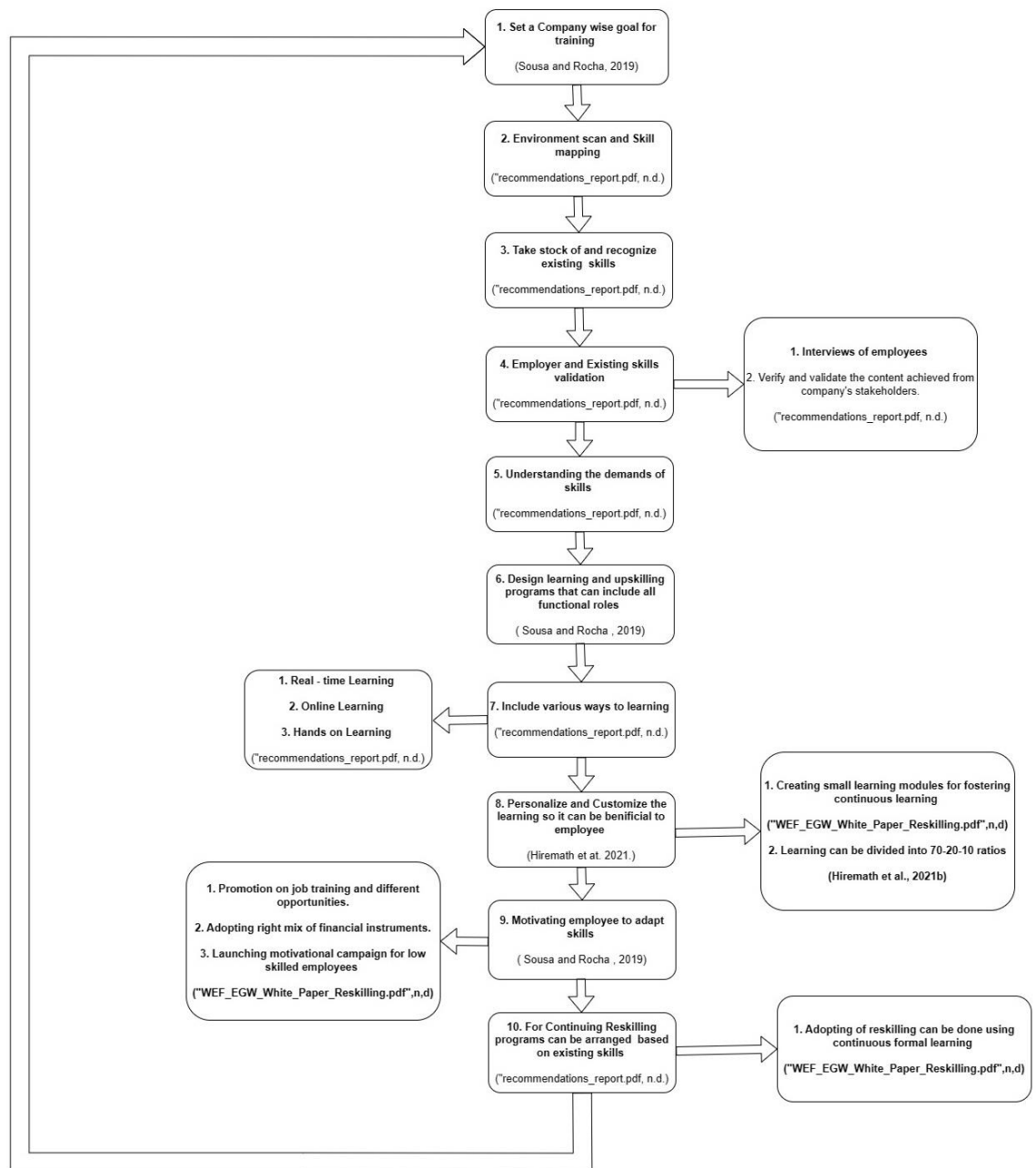
Figure 13. The Conceptual framework created from the existing latest theories.

The approaches and best practices discussed in Section 3 point to a certain logic in building the upskilling and training programmes for digital roles for addressing the changing needs of the current IT field. These approaches and best practices were summarized into the following key steps, articulated below, based on the available knowledge and best practices discussed above.

*Step 1. Set a companywide goal.* In SMEs, establishing company-wide upskilling and reskilling goals helps the workforce as a whole to work together towards a single goal of growth and adaptability. Well-defined goals, such reaching a particular proportion of newly certified staff, can offer a concrete development path. These objectives not only strengthen the company's competitive advantage but also show a dedication to worker achievement, which raises staff morale and loyalty. Based on: (Sousa and Rocha, 2019)

*Step 2. Environmental Scan and Skill Mapping.* A strategic basis for successful upskilling and reskilling in SMEs is the completion of an environmental scan and skill mapping. SMEs can determine which developing talents are in demand by examining industry trends and the external environment. Then, skill mapping makes it possible to precisely evaluate the gaps and strengths in the current workforce, allowing for the implementation of focused training and development programmes. In order to stay competitive and flexible in changing markets, SMEs can spend resources in the correct skill areas thanks to this data-driven approach.Based on('recommendations_report.pdf', Krista Medhurst Lucy Altrows, 2023)

*Step 3. Take stock of and recognize existing skills.* The initial phase towards successful upskilling and reskilling in SMEs is to assess current capabilities and take stock of them. It facilitates the identification of the workforce's essential competencies, maximising the use of resources for focused training initiatives. Recognising these abilities also makes workers feel valuable and motivated, which promotes a culture of ongoing learning and flexibility—two things that SMEs need to succeed in fast-paced work environments. Based on('recommendations_report.pdf', Krista Medhurst Lucy Altrows, 2023)

*Step 4. Employer and existing skills validation.* An essential element of employee upskilling and reskilling in SMEs is employer-driven skills validation. Employers can maximise training efforts by identifying and utilising current abilities and concentrating on areas that genuinely require development. By coordinating learning initiatives with business demands, this strategy not only improves cost-efficiency but also gives employees the ability to gain the necessary skills, which eventually benefits the individual as well as the organisation. Employers are able to confirm current skill sets by having in-depth interviews with staff members and cross-referencing the data supplied by important business partners. These steps guarantee a precise evaluation of the present skill set, enabling customised upskilling initiatives. SMEs may strategically engage in training that fills in real skill gaps and optimises growth and competitiveness by fusing

stakeholder insights with employee feedback**. Based on('recommendations_report.pdf', Krista Medhurst Lucy Altrows, 2023)

*Step 5. Understanding the demands of skills.* An internal demand assessment and market analysis are the first steps towards understanding the skill demands that are essential for employee upskilling and reskilling in SMEs. To ensure that their training programmes are in line with new needs, SMEs need to stay abreast of industry trends, technological improvements, and regulatory changes. Furthermore, obtaining feedback from staff members via surveys and other channels guarantees that upskilling programmes take into account both individual career goals and corporate demands, resulting in a more engaged and productive workforce. Based on ('recommendations_report.pdf', Krista Medhurst Lucy Altrows, 2023)

*Step 6. Designing training and upskilling programs that can include all functional roles.* In order to ensure equitable upskilling and reskilling, comprehensive training programmes that address all functional positions within a SME must be designed. A comprehensive approach to workforce development is ensured by designing these programmes to address the unique requirements and skill shortfalls of varied roles. SMEs may empower every employee to contribute effectively by offering easily accessible, role-specific training. This will ultimately improve the company's overall performance and flexibility in a competitive market. Based on: (Sousa and Rocha, 2019)

*Step 7. Inducing various ways of learning. Encouraging* a variety of learning approaches, such as in-person instruction, virtual learning, and hands-on experiences, is crucial for thorough reskilling and upskilling in SMEs. While online training provides flexibility and accessibility, real-time learning helps employees quickly adjust to changes in the market. Practical training ensures a well-rounded skill set and enhances theoretical knowledge, preparing SME personnel for success in a changing business environment. Based on ('recommendations_report.pdf', Krista Medhurst Lucy Altrows, 2023)

*Step 8. Personalize and customize the training so it can be beneficial to employees.* For employees in SMEs to reskill and upskill, learning experiences require being personalised and tailored. Targeted learning modules that are brief and flexible can address particular skill deficiencies. By implementing the 70-20-10 model, which places 70% of emphasis on challenging tasks and problem-solving abilities, 20% on group learning and knowledge sharing with colleagues, and 10% on formal intervention

training, employees can learn in a variety of engaging ways and effectively develop skills that meet both their individual needs and the growth objectives of the company. Based on: (Hiremath, Mohapatra and Paila, 2021b).

*Step 9. Motivating employees to adapt skills.* In SMEs, encouraging job possibilities and easily accessible training programs—as well as laying out a clear path for professional advancement—are key components of inspiring staff to accept new abilities. Offering monetary rewards from businesses or government funding, like tuition reimbursement or bonuses depending on skill level, can encourage skill development even more. Motivating low-skilled workers with ads that highlight success stories and the advantages of upskilling can foster a culture of continual learning and produce a workforce that is more competitive and adaptable. Based on: (Sousa and Rocha, 2019)

*Step 10. Continuous reskilling programs can be arranged based on existing skills.* For SMEs, a strategic approach to employee motivation is to design continual reskilling programmes that are customised to the employees' current skill sets. SMEs can maximise skill development by implementing a continuous formal learning framework that incorporates performance support, eLearning modules, and on-the-job training. This strategy boosts productivity and job satisfaction by fostering a culture of continuous development and making use of employees' pre-existing expertise. Additionally, it guarantees that workers maintain their competitiveness and adaptability in the dynamic business environment, ensuring the long-term viability of SMEs. Based on ('recommendations_report.pdf', Krista Medhurst Lucy Altrows, 2023.)

# 4 Current State Analysis of the Case Company's Existing Training and Upskilling Practices

This section discusses the results from the current state analysis of the current upskilling and training practices used in the case company. To structure this analysis, it is done against the steps recommended based on literature and best practices.

## 4.1 Overview of the Current State Analysis

The goal of the Current State Analysis (CSA) in the context of the thesis was to evaluate the existing landscape of employee training and upskilling practices. The analysis aimed to identify the current state and areas for improvement, assess skill gaps, and understand the readiness of the Zplus Solution company to fulfil digital role requirements.

In order to assess the current state of upskilling and training practices at the case company, this structured approach for conducting the current state analysis for employee was suggested to gain a thorough understanding of current practices, skill gaps, resource availability, and areas for enhancement.

First, *Contextual Understanding and Objective Setting.* The initial step is focused on understanding the specific digital roles within the case company by aligning the analysis with the company's strategic goals and objectives related to these digital roles.

Second, *Skills Assessment and Gap Analysis.* It was done by conducting interviews to evaluate the current skill levels of employees in digital roles; comparing the existing skill sets against the requirements for optimal performance in these roles and prioritizing skill areas that needed immediate attention to bridge identified gaps.

Third, *Evaluation of Current Training Programs.* It was done by examining the effectiveness of existing training programs designed for digital roles within the SME; analyzing training content, delivery methods, feedback mechanisms, and participant engagement to assess their effectiveness, and identifiing strengths and weaknesses to inform potential enhancements.

Fourth, *Assessment of Technological Infrastructure.* It was done by evaluating the technological tools and infrastructure available for facilitating training and upskilling; assessing the compatibility with the required skill development and identified any technological limitations hindering effective training.

Fifth, *Employee Feedback and Resource Readiness.* It was done by gathering feedback from employees engaged in digital roles regarding the adequacy of current training; assessing employee engagement levels, willingness to upskill, and their perception of the importance of training in their roles; and evaluating the company's readiness and resource allocation towards employee training initiatives.

These sequential steps were done to assess the current state of employee training and upskilling within the Zplus Solution IT company. This systematic approach aims to provide a thorough foundation for developing targeted recommendations to enhance employee training and upskilling initiatives within the Zplus Solution IT company.

Data 1 was gathered during interactions with the company stakeholders, providing insight into the organisation's existing employee upskilling practices. Data 1 included the discussion and interviews that were had with Zplus Solution´s stakeholders. The interview questions were developed using a conceptual framework that was derived from the literature review in Section 3. Data 1 focused on gathering stakeholder inputs about the steps listed for each phase of the conceptual framework.

4.2 Description of the Zplus Solution IT Company´s Operations and Needs in Relation to Upskilling and Training for Digital Roles

The case company provides clients throughout the world with a full range of services including software development, professional website development, e-commerce website design, mobile application development for iOS and Android, live project training, SEO, and creative graphic design including logo design, stationery design, motion graphic design, and video editing. Additionally, the company offers a wide range of graphic design services, including logo, animated, stationery, and 2D and 3D design; video editing for short films, documentaries, YouTube videos, promotional videos, business video profiles, motion graphic design, motion greeting and invitation design, and photo album design. Finally, the organisation offers additional services including

bulk SMS, SSL certification, digital marketing and SMM, ISO certification, logo trademark, and bulk SMS.

Flexibility and adaptability are two of a company's main strengths. To demonstrate their adaptability in meeting a range of client needs, they are skilled at customising their services to meet the demands of particular projects. Their ability to adapt quickly to changing market conditions and customer preferences helps them become more competitive. At the same time, the company has several weaknesses. The unpredictable nature of project-based business is a major obstacle. Project-based work frequently entails ambiguous deadlines, reliance on client approvals, and scope modifications, all of which can cause variations in the distribution of resources. This makes it difficult to manage resources effectively and retain people. Therefore, it can be challenging for a business to find a balance between managing projects effectively and retaining employees.

The case company has been working in the software industry for many years, and it has developed rapidly growing operations throughout India. The company supports its clients´ growth by providing a platform for global audience engagement. It works hard to deliver Effective Quality Solutions and Services to help clients meet their business objectives. It provides long-lasting, powerful solutions for its clients´ business.

Zplus Solution offers two types of customer service: product-based and service-based. In conversations with Zplus Solution's stakeholders, they stated that they mostly faced problems with the product-based clients with highly customised demands. As a result, the employees must constantly develop their skills, and they wish to receive enough training and upskilling to respond to these sophisticated demands.

Below is a detailed report of the current upskilling and training practices at the company is provided below.

Table 3. Findings from Data 1 (CSA) in relation to the Conceptual framework.

|  | Inputs from literature (CF) | Key focus areas from CSA (from Data 1) | Descriptions of their suggestions (Data 1, summary) |
|---|---|---|---|
| 1 | Step 1. Set a companywide goal. | Certified Staff, Employee achievement, | Company needs focus about their employee based on their achievement and their expertise in different domain and future plan of the company to gain new project which is handle by |

| | | Development Path | the marketing team and looking in that matter they are motivate and enhance skills of the employee. |
|---|---|---|---|
| 2 | *Step 2. Environmental Scan and Skill Mapping.* | Current technology demand, Skill identification | Discussion needs with the CTO to understand current trends of the IT market and based on that identify which technology stack is helpful for the company for upcoming year. Even identify current employee workforce needed to be enhance. |
| 3 | *Step 3. Take stock of and recognize existing skills.* | Current Capabilities Recognize skills | Discussion needs with the tech lead and project manager got the idea about current serving of the company and based on that got to know about current employee project on hand and their technology. |
| 4 | *Step 4. Employer and existing skills validation.* | Utilize current skills Optimize growth | Discussion needs team manager and project manager, to understand how they utilize employee current skills in ongoing project and that will help to optimize company growth as well growth of the employee. |
| 5 | *Step 5. Understanding the demands of skills.* | Internal Assessment Technology Improvement | Need to understand they follow concrete quarter meeting which is consider as Internal assessment about employee their current expertise and based on that they easily identify which employee needs improvement in particular domain or not based on the current and upcoming project this discussion held with Tech lead, team manager and project manager. |
| 6 | *Step 6. Designing training and upskilling programs that can include all functional roles.* | Comprehensive Training Program Role Specific training | Discussion needs with the HR Manager and Other higher authority, got to know they have concrete mechanism about training program and evaluation of the outcome after completion of the program based on that next project is assign to particular employee. |
| 7 | *Step 7. Inducing various ways of learning.* | In Person Online Line | Upskilling done in various ways by the company like in person session which is most probably hand – on session they follow, also needs to check does they provide any online platform for employee upskilling. |
| 8 | *Step 8. Personalize and customize the training so it can be beneficial to employees.* | Task based approach | Discussion needs with the HR Manager if they have policy to identify employee development based on task, and then after completion of the training. |
| 9 | *Step 9. Motivating employees to adapt skills.* | Job Growth Professional Advancement | Need to understand role of HR regarding how they aware the employee of the company and how they provide benefits of the professional advancement. |

| 10 | *Step 10. Continuous reskilling programs can be arranged based on existing skills.* | Learning Framework | Company needs to provide all the necessary technical requirement which will help employee for their professional growth and also for company growth. |
|---|---|---|---|

As seen from Table 3, the company uses some upskilling and training practices. These current practices were discussed based on the steps in the conceptual framework developed in Section 3. The summary of the above discussion points to multiple needs and development areas for better nurturing employee skills and individual growth. The stakeholders agreed that it should begin by setting a clear company goal and progress through steps involving skill recognition, validation, and understanding current and future skill needs. The stakeholders agreed that this process should engage various stakeholders like Certified Staff, HR Managers, Project Managers, and Tech Leads, reflecting a collaborative approach. Steps should also emphasize designing personalized training, diverse learning methods, and motivating employees for professional advancement. Regular assessments and adaptability are crucial in this continuous learning environment.

The discussions with key personnel highlighted the current efforts directed toward integrating employee skills with the company's growth while ensuring a relationship between employee development and organizational success.

4.3   Current Upskilling Practices in the Company

Zplus Solution is centred around projects. Consequently, the company expects its staff to develop their knowledge to address the requirements and wants of its clients. Because of this, upskilling is crucial to the company's ability to maintain a strong position in the market. Currently, employee upskilling at the case company takes diverse efforts to adapt to the rapidly evolving nature of technology.

First, these efforts usually begin with *an evaluation of current skill sets* and the *identification of areas in need of improvement*. The business may use several tactics to efficiently upskill its employees. In order to pinpoint specific areas for possible upskilling programmes, the HR manager & CTO inquired about the employee's familiarity with

upcoming technologies and highlighted their competency in programming languages throughout the interview.

Second, access to *online learning platforms* is a common investment made by company. These platforms provide a wide range of materials and courses that address technical skills, software competency, coding languages, cybersecurity, cloud computing, and emerging technologies. Workers are free to delve into these platforms and collection of materials at their leisure, which promotes flexibility in their education and skill development. The team lead emphasised in the interview how important it is to use online learning environments, citing particular courses on cybersecurity and programming languages that can be taken to help staff members improve their skill sets and keep up with emerging technologies.

Third, the case company utilizes *internal workshops* or *training sessions* led by seasoned *experts or outside educators*. These events explore certain software tools, technologies, or techniques that are pertinent to the goals of the organisation. Incorporating realistic, hands-on exercises and simulations is typically used to strengthen learning and practical application.

Fourth, *meet-up initiatives* and *mentoring* are also utilized for upskilling. Zplus solution´s stakeholders set it up for staff members so they can impart knowledge and experience to others. Junior staff members are frequently *mentored* by more seasoned workers who provide advice, insights, and chances for skill development through project collaboration, shadowing, and frequent feedback sessions. The team leader provided further details about the company's mentorship programme during the interview, describing a situation in which an experienced developer guided a junior colleague through an integration of machine learning project. They underlined how these programmes helped mentees and mentors alike by promoting skill development through shadowing, cooperative learning, and regular feedback sessions.

Fifth, Zplus Solution supports *practical experience* and *on-the-job training*. Workers can apply what they've learned in real-world situations by working on genuine projects or activities requiring new technology. It enables a more profound comprehension and adept use of recently obtained abilities. The team leader gave an example of a recent project in which workers were tasked with using their newly learned coding skills to create

a prototype for a client. She emphasised how this practical experience allowed for deeper comprehension and real-world application of the newly learned skills.

Finally, Zplus solutions also use *ongoing assessment and feedback* as part of its upskilling practices. Such evaluations aid in monitoring development, pinpointing problem areas, and customising projects. Stakeholders went on to say that the feedback loop makes sure that activities for upskilling stay in line with organisational and individual objectives. Here, the team leader emphasised in the interview the need of continuous evaluations in the upskilling process. She also mentioned how frequent feedback sessions assisted in identifying areas where staff members needed to improve and ensured that training programmes complemented both corporate and personal objectives.

## 4.4    Current Reports in the Company That Help in Upskilling and Training

Reports are critical to the assessment and planning of Zplus Solution company's actions and projects. The stakeholders explained that the following reports assist them in analysing market trends, determining the efficacy of various marketing strategies, and coming to well-informed conclusions. The following are the most important company-wide reports that Zplus Solution regularly maintains:

First, *Industry Specific Reports* provide in-depth insights into skill gaps, present and future trends, and the critical skill sets required within these particular industries, enable Z plus solution to delve extensively into a particular technology. This aids in pinpointing potential skill gaps among staff members and emphasises cutting-edge approaches or technology that are essential to success. These studies are a great resource for businesses looking to stay competitive and relevant by helping with strategic planning for upskilling efforts and matching skill development with industry demands.

Second, *Work Force Development Reports* provide Zplus Solution with a thorough understanding of how different areas or industries are developing, including the need for different skills, the recruiting practices that are now in place, and the essential training requirements.

Third, *Budget and Resources Allocation Reports* track financial outlays and resource allocation, making it possible to evaluate the effectiveness of investments. These reports offer vital information about how cost-effective training programmes are, which helps the company to make well-informed decisions about resource allocation and future training initiatives.

Fourth, *Financial Reports* provide a clear understanding of the organization's financial performance, resource allocation, and cost-effectiveness in its IT operations. They achieve this by covering all of the budgets, spending, and cost breakdowns in detail.

Fifth, *Skill Assessment Reports* from Zplus Solution assess employees' current skill sets, pinpointing their strengths, shortcomings, and areas that require improvement. This provides an extensive picture that is essential for focused training and development programmes inside the company.

Finally, *Feedback and Survey Reports* gather the staff members' thoughts and recommendations regarding training initiatives, providing insightful information that can increase motivation by praising accomplishments and making adjustments in response to helpful criticism, thereby encouraging ongoing participation in the process of learning. These reports serve as stimulants to improve training programmes, make them more successful, and foster an improvement-oriented culture inside the company.

4.5   Summary of Results from the Current State Analysis

Interacting with the stakeholders of the case company, they stated that the business operates in a dynamic setting, carrying out different activities and endeavours on a project-by-project basis. Because of how they operate, these entities frequently have special needs for skills. To put it simply, the case company has encountered difficulty with access to specialised skills in the cutthroat IT market competition.

The current state analysis of training programmes in the case organisation showed a wide range of obstacles in developing the workforce that would be proficient in digital technology. Moreover, several obstacles make it difficult to carry out thorough training programmes smoothly. The obstacles include the restraints like scarce resources, particularly financial limitations, and labour-intensive training methods. These obstacles were found to provide the major obstacles to the implementation of effective upskilling

programmes in the case organisation. Furthermore, because digital skills are constantly evolving, training methods also need to change, which makes the problem of upskilling much more severe.

The current state analysis made clear the necessity of customised, flexible, and reasonably priced training approaches and methods that would fit the distinct operational characteristics of this middle-sized IT SME. These obstacles present a chance for a creative approach that would make use of industry best practices, focused skill development initiatives, and cooperative learning platforms to close the digital skills gap in the Zplus Solution company.

## 5   Building Proposal for Training and Upskilling for the Case Company

This section combines the approach to upskilling and training for the case company developed via the insights obtained from the analysis of the current state (Data 1) with the internal co-creation process (Data Collection 2). Through balancing various viewpoints, borrowed from available literature and best practice, this section aims to create a customized approach to upskilling and training for the case company.

### 5.1   Overview of the Proposal Building Stage

The goal of the proposal development phase is to provide a strong proposal for the upskilling and training of employees at Zplus Solution IT. This thesis's important sections—the literature review, the Current State Analysis (CSA) results, and the proposal—all work together to outline a comprehensive approach for employee training and upskilling in digital roles inside an IT-focused Zplus Solution company. The literature acts as the foundation, highlighting important concepts such as creating a culture of continuous education, utilising modern instructional tools, establishing customised learning pathways, stimulating creativity, etc. The CSA's findings, which identify gaps in the company's existing upskilling and training practices with regard to continuous learning culture, advanced technology utilisation, and personalised learning paths, then support these themes. In light of these, the Proposal outlines the own approach.  Based on the results from both, the Proposal was developed.

Interviews were conducted with Zplus Solution company stakeholders. A comprehensive discussion on the conceptual framework for upskilling workers in the IT industry occurred during that interview. Subsequently, recommendations were solicited from relevant parties regarding the elimination or inclusion of steps within the current framework and the creation of new ones specifically for their organisation. These measures could prove advantageous in terms of methodically executing employee upskilling and obtaining any missing reports that may prove more advantageous for the company down the road.

Following discussions with the Z plus solution company, several of the ten key phases in the conceptual framework—which was developed using the most recent theories and methodologies for upskilling personnel in the IT sector—were deleted, and the new approach now consists of six main elements.

The most important Stakeholders at Zplus Solution Company participated in the meeting and provided suggestions and requirements for the company's building proposal. Several meetings and interviews were scheduled with Zplus Solution company stakeholders during the data collection process. A discussion was had based on the section 3 conceptual framework. Following each round of the debate, stakeholders expressed the wishes and demands of their company.

In the first part of the interaction, the CTO, who oversees Zplus Solution's overall technical vision and strategy, provided advice on the company's periodic goals connected to upcoming projects. They also offered feedback on how the company's technical goals and the upskilling programme align supervisor of Projects.

In order to discuss the optimal course of action for upskilling in accordance with project needs, the project manager took part in the second stage. The HR Manager is essential to the upskilling process at several points. In the third phase, he set the standard for supplying employee reports with a record of their current skill set, based on their present understanding. The Tech Lead, who oversees technical direction and leadership for the IT team, participated in talks to identify the optimal upskilling strategy that complies with technical criteria. He contributed by expressing his wishes for the development of learning modules as well. The Team Manager participated in several phases, especially the second one, where they talked about the best ways to upskill their teams. In the last phase, it was also important to make sure that employee motivation for the upskilling programme fits with their functional responsibilities and continues their education.

5.2    Findings from Data 2 (pulling together CSA, CF and Data 2 for the Proposal)

The stakeholders of Zplus Solution company communicated that their goals vary depending on the projects they work on, so employees' needs change periodically. Based on these needs, upskilling and training programmes need to be offered. Moreover, the stakeholders suggested that programmes should be broken down into smaller modules to make it easier for employees to learn and adjust to their needs and schedules. Subsequently, they stated that in order to maintain employee involvement in upskilling and reskilling in accordance with projects, they need to boost motivation. A more detailed summary of these discussions, formulated into the corresponding steps of the framework, is given in Table 3 below. Some of the CF steps were found important

and were retained as relevant for the case company; while some other were either dropped or re-formulated, based in the company's needs.

Table 4. Key stakeholder suggestions (findings of Data 2) for Proposal building in relation to findings from the CSA (Data 1) and the Conceptual framework.

| | *Inputs from literature (CF)* | *Key focus areas from CSA (from Data 1* | *Stakeholder suggestions for the Proposal (from Data 2)* | *Descriptions of their suggestions (in detail)* |
|---|---|---|---|---|
| 1 | *Step 1. Set a companywide goal.* | Certified Staff, Employee achievement, Development Path | Discussion with the higher authority and they need concreate ERP system which will help them to track each and every progress of the current employee even their domain expertise. | Company needs focus about their employee based on their achievement and their expertise in different domain and future plan of the company to gain new project which is handle by the marketing team and looking in that matter they are motivate and enhance skills of the employee. |
| | | | Revise this to goal of company<br>They need to scale company internal ERP System to identify all new requirement and tracking of the employee skills | |
| 2 | *Step 2. Environmental Scan and Skill Mapping.* | Current technology demand , Skill identification | CTO provide information how they collaborate with the marketing team and what are the upcoming strategies of the company to get the project from the market and according to that he will identify the technology demand and skills for their employee. | Discussion needs with the CTO to understand current trends of the IT market and based on that identify which technology stack is helpful for the company for upcoming year. Even identify current employee workforce needed to be enhance. |
| | | | Revise this goal of company with the collaboration information provided by the marketing team and need internal mechanism to track all the record. | |

| 3 | *Step 3. Take stock of and recognize existing skills.* | Current Capabilities<br><br>Recognize skills | Based on the discussion with tech lead and team manager, every month they have progress meeting of the current team members with the senior members and with the help of that they can recognize the skills of the employee. | Discussion needs with the tech lead and project manager got the idea about current serving of the company and based on that got to know about current employee project on hand and their technology. |
|---|---|---|---|---|
| | | | Revised as interaction with stakeholder is need for progress of the company.<br><br>They need to take initiative and do meeting every quarter to understand how this current progress of employee going on. | |
| 4 | *Step 4. Employer and existing skills validation.* | Utilize current skills<br><br>Optimize growth | Team manager & Project manager provide information about they have current track of all the employee in their own internal track mechanism which will use to optimize employee and that will ultimately help to utlize their current skills in proper way. | Discussion needs team manager and project manager , to understand how they utilize employee current skills in ongoing project and that will help to optimize company growth as well growth of the employee. |
| 5 | *Step 5. Understanding the demands of skills.* | Internal Assessment<br><br>Technology Improvement | As discussion with the team manager they also do monthly meeting of ongoing project which is consider as internal assessment and based on that they can identify employee needs technological support or not. | Need to understand they follow concrete quarter meeting which is consider as Internal assessment about employee their current expertise and based on that they easily identify which employee needs improvement in particular domain or not based on the current and upcoming project this discussion held with Tech lead, team manager and project manager. |

| 6 | *Step 6. Designing training and upskilling programs that can include all functional roles.* | Comprehensive Training Program<br><br>Role Specific training | Senior member of the company and HR have organized different training program and evaluation criteria to get to know does that training help to the employee or not. | Discussion needs with the HR Manager and Other higher authority, got to know they have concrete mechanism about training program and evaluation of the outcome after completion of the program based on that next project is assign to particular employee. |
|---|---|---|---|---|
| 7 | *Step 7. Inducing various ways of learning.* | In Person<br><br>Online Line | HR frequently organized training as per the requirement of the tech lead or team manger either in person or online to the employee for the company benefit. | Upskilling done in various ways by the company like in person session which is most probably hand – on session they follow, also needs to check does they provide any online platform for employee upskilling. |
| | | | Revised to small learning module which will foster learning of the current employee | |
| 8 | *Step 8. Personalize and customize the training so it can be beneficial to employees.* | Task based approach | Discussion with the CTO, Tech lead, Team Manager they have tracking all the improvement of the current employee in their skill enhancement. Once employee have good knowledge about the technology, they have to complete certain task based on the project which they have to works once he/she clear the task then only employee onboard for particular project. | To have policy to identify employee development based on tasks, and them compare to the state after completion of the training. |
| 9 | *Step 9. Motivating employees to adapt skills.* | Job Growth<br><br>Professional Advancement | HR takes frequently session to give glimes of the professional growth to the employee and how they can achieve that growth and what are the other perks they can get after their achievement to motivate employees for skill enhancement. | Need to understand role of HR regarding how they aware the employee of the company and how they provide benefits of the professional advancement. |

| 10 | *Step 10. Continuous reskilling programs can be arranged based on existing skills.* | Learning Framework | Discussion with the higher authority company have all the different program which ultimately help not only employee also company growth. | Company needs to provide all the necessary technical requirement which will help employee for their professional growth and also for company growth. |
|---|---|---|---|---|

As seen from Table 4, the discussed went along the structured approach (developed in Section 3 based on availbale literature and best practice).

Following discussions with the Z plus solution company, several of the ten key phases in the conceptual framework—which was developed using the most recent theories and methodologies for upskilling personnel in the IT sector—were considered not relevant for the case company's current needs and deleted, and the new approach now consists of six main elements. In the new, proposed approach:

Based on the requirements for impending projects, a Zplus solution company's periodic goals should be displayed in the first phase. A discussion with stakeholders should be held in the second stage to discuss the best course of action for each employee's upskilling. Based on the outcome of this meeting, a third step should be to record employee reports of their current knowledge. The fourth phase is when the programme is created using the reports that were produced in the earlier processes. Step five ensures that learning modules are needed. should be designed such that all of the employees' functional duties can be covered and they can use them for ongoing education. The final, sixth stage is crucial for the business to ensure that staff members are driven to regularly and continuously upskill in accordance with the objectives of the business based on upcoming initiatives. These suggestions were implemented I to the Proposal, as shown in Section 5.3 below.

Additionally, the stakeholder discussions emphasized the need to revamp the internal ERP system for goal tracking, skill identification, and employee progress monitoring. Collaborative efforts between the CTO, Tech Leads, and managers aim to align technology demands with upcoming strategies while recognizing existing skills through regular meetings. Internal assessments guide training programs, which are evaluated for effectiveness before assigning new projects. HR initiatives motivate employees through growth opportunities, and there's a focus on continuous reskilling aligned with the

company's learning framework. Stakeholders underscore the need for a more streamlined, stakeholder-interaction-based approach to facilitate ongoing skill enhancement for both employee and company growth.

## 5.3 Proposal: A New, Proposed Framework for Upskilling and Training for Digital Roles for the Case Company

Continuous learning and upskilling are now necessary for both individual career growth and the overall success of businesses. Recognising the value of staying up to date with new tools and methods, Zplus Solution is committed to changing the way it handles staff upskilling. The Zplus Solution Company's stakeholders were interviewed, and the results showed that proper and systematic training of employees is required for them to conduct a well-planned programme for continuous learning based on projects of the company proposal created. This new approach provides the company with a systematic way to conduct an upskilling programme in comparison to previous programmes, and missing reports can also be generated along with it. This new approach outlines how each individual will improve their abilities in light of future projects, which are defined as happening on a regular basis, even at short intervals, and can support staff members' ongoing education and training. This proposal calls for regular skill assessments of employees through quizzes and skill-testing modules, which will allow the business to keep track of each employee's current skill level and develop future programmes to keep all staff members up to date on skill adaptations.

Based on the stakeholder inputs, a Proposal for the Upskilling and training framework was developed tailored to the need of the case company. It is shown below in Figure 13.
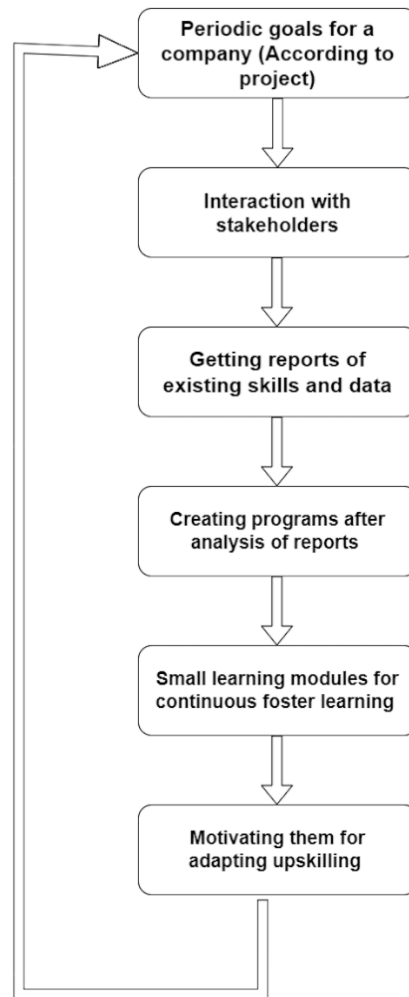
Figure 14. Initial Proposal: A Framework for Upskilling and Training for digital roles for the case company.

This Proposed framework comprises fewer steps, as per the discussion and the needs of the company.

*Step 1. Periodic goals for a company (according to projects).* Periodic goals in a company, tailored to specific projects, should delineate actionable milestones and objectives set at regular intervals. These goals should serve as benchmarks guiding the upskilling process for employees, aligning their learning trajectories with project requirements. By establishing clear, time-bound objectives, employees should gain focused direction for skill development, ensuring their capabilities are synchronized with the evolving demands and success criteria of ongoing and upcoming projects within the IT sector.

*Step 2. Interaction with Stakeholders.* It is important to a company to involve stakeholders in its employee upskilling programmes. Their participation should guarantee that skill development is in line with project requirements, integrates a variety of viewpoints for thorough training, gains support for the success of the programme,. Additionally, it should make it easier to create focused, effective training plans that are matched to the objectives of the company and the aspirations of the workforce.

*Step 3. Getting reports of existing Skills and data.* Acquiring details about current competencies and employees data from company stakeholders is essential for creating customised upskilling initiatives. By highlighting skill gaps and areas of strength, these reports act as a compass, directing focused training efforts. Through the provision of individualised growth paths and the assurance of report accuracy and applicability, stakeholder insights should ultimately improve employee capabilities and align them with the changing needs of the IT industry.

*Step 4. Creating programs after analysis of reports.* Developing programmes after an analysis of the company's current skills reports is essential for developing focused upskilling campaigns. These evaluations should offer a thorough understanding of the employees's present skills and imperfections. Then, customised upskilling programmes should address particular skill shortfalls and connect training modules with employee needs. This should guarantee effective use of resources, encourages the growth of skills, and moves employees towards satisfying changing demand in the sector.

*Step 5. Small Learning modules for conitinuous and foster learning.* Small learning modules, which provide compact, targeted content that should be easily consumed and adaptable to hectic schedules. This is essential to the ongoing upskilling of employees in the company. With these modules, employees should take part in continuous learning that fits in with their daily tasks, promotes a continuous improvement culture, and makes it possible to quickly pick up and use new skills in the quickly changing technology landscape.

*Step 6. Motivating them for adapting Upskilling.* In the company, encouraging employees to upskill should become essential as it creates a culture of continual growth and helps them stay relevant in a field that is changing quickly. It also gives employees confidence and motivates them to adopt new technology and processes, which improves their employability and advances the innovation of the firm. Additionally, increasing motivation

through upskilling should result in a more engaged employee who is invested in both individual and corporate progress.

The outlined approach should be supported by the following reports that are recommended for use in the case company.

## 5.4 New, Proposed Reports for the Company to Support Upskilling and Training (To Be Included into the Framework as "Future State")

In interviews conducted with the stakeholders of the Zplus Solution company, they listed and explained about the existing reports in their company as mentioned in Section 4.3 in CSA. According to stakeholders, they also had suggestions for their company based on this new proposal for some important reports which were earlier missing in the company. Generating these reports can be beneficial for holding records of employee's skills and helping achieving company´s targeted goals. The reports which should support the new proposal are as follow:

First, *Project Timeline Reports* should help the company to maintain a thorough summary of the project's progress, goals, and due dates that include a timeline of the tasks and their current state. They are an essential instrument for tracking project progress, guaranteeing schedule compliance, and assisting stakeholders in making well-informed decisions on resource distribution and project management tactics.

Second*, Stakeholder Update Reports* should inform the appropriate parties about the status of the project, its successes, its difficulties, and its future goals. These reports promote transparency and aid in well-informed decision-making by keeping stakeholders updated, coordinated, and involved in the project's advancements.

Third, *Training Needs Assessment Reports* should be utilized for determining specific training needs and assessing employee proficiency, technology advancements, and skill gaps that already exist. These reports serve as a roadmap for customised learning initiatives, guaranteeing that upskilling efforts are focused and in line with the organization's technology goals and personnel development requirement needed.

Fourth, *Learning Pathway Reports* should help the company in maintaining customised road maps detailing employees' skill development paths. These reports facilitate ongoing

skill development and career advancement by guiding people through customised learning experiences that are in line with their jobs, skill gaps, and the goals of the organisation.

Fifth, *Engagement Reports* can help Zplus Solution Company in examining how staff members engage, participate, and work together on different technology-related projects as well as. These reports monitor and assess how involved employees are with particular software, tools, or platforms; they also offer insights into user adoption rates and aid in the optimisation of resources and tactics to improve overall effectiveness and productivity.

Sixth, *Testimonials and Success Stories Reports* can serve as convincing proof of the real-world applications of knowledge, technology, and solutions; this encourages trust among stakeholders and employees and motivates employees to continue upskilling which can establish the company's credibility and experience in completing projects successfully.

In conclusion, the objective of this proposed improvement is to fill in the gaps in the company's report repertory by adding important reports that were missing before. It is expected that these planned reports will be essential in both documenting and maintaining records of the skills of staff and guiding the organisation towards achieving its goals. The Zplus Solution company is prepared to use a more comprehensive and organised method to match employee skill sets with organisational objectives by implementing these new reports, creating employees who are more adaptable and efficient.

# 6    Validation of the Proposal

This section reports on the results of the validation stage and points to further developments to the initial Proposal.  At the end of this section, the Final proposal and recommendations are presented.

## 6.1    Overview of the Validation Stage

This section reports on the validation results of the proposed framework developed in Section 5. Validation refers to the evaluation, e.g. expert judgement of the proposal by the key stakeholders at the case company (Data 3).

The proposed approach for the case company underwent a validation phase that included some numerous crucial procedures that were carried out to ensure its effectiveness and congruence with the organization's goals. The main goals that guided each step were to maximise the effectiveness of the framework, ensure alignment with project requirements, and gather feedback. The framework validation was conducted by chief technical officer (CTO), Project Manager, HR Manager, Tech Lead and Team manager stakeholders in the final presentation followed by the feedback and discussion.

Iterative presentations and conversations, as well as analysis of feedback with stakeholders were used to validate the framework, thus ensuring a thorough and customised approach that fits the objectives of the case company and the changing needs of the IT sector.

## 6.2    Developments to the Proposal (based on Data Collection 3)

Table 5. Expert suggestions (findings of Data 3) for the Initial proposal.

|   | *Inputs from* **Validation** | *Stakeholder evaluations and further developments to the Initial proposal (excepts/details from* **Data 3)** |
|---|---|---|
| 1 | *Step 1. Periodic goals for a company (according to projects).* | Based on the discussion with the company, they confirmed the first step of the proposal and now they are planning to set a goal every six months in relation to every employee of the company. |

| 2 | *Step 2. Interaction with Stakeholders.* | Following the goal setting, the second step is to communicate to the stakeholders such as clients and employees and understand what are the issues they are facing and how they can help them with the upskilling of employees towards new technology. |
|---|---|---|
| 3 | *Step 3. Getting reports of existing Skills and data.* | Based on the findings from Step 2, they will manage records about the upskilling needs and current competences, in relation to project-based needs that makes hurdles when client demand. They will also identify certain employees who have command of the needed new technologies. |
| 4 | *Step 4. Creating programs after analysis of reports.* | Based on the reports, now they are to build strong internal mechanism to help their employee to grow professionally and technically. Here, they are looking to track their employee skills which will ultimately help the company grow. |
| 5 | *Step 5. Small Learning modules for continuous and foster learning.* | The upskilling can be done in a number of different ways. They agreed for small learning modules as well the approach based on the continuous learning. There, they will try to set new target to the employees quarterly. |
| 6 | *Step 6. Motivating them for adapting Upskilling.* | The company is planning to boast employee knowledge and motivate them via benefits if they adopt new upskills that are needed by the company. Skills here mean the competences for professional growth. |

First, key stakeholders confirmed that in the upskilling approach the goal setting is needed and should relate to the project-oriented goals that the organisation has set forth in Step 1.

Second, a conversation with all parties involved should take place, highlighting the company´s upskilling needs (Step 2). The purpose of this discussion is to gather opinions in order to confirm the needs and applicability and efficiency of the suggested upskilling, and how it took into account the opinions of stakeholders, and was in line with project requirements and company goals.

Third, gathering and analysing reports was confirmed as needed for outlining the current competencies and information on stakeholders. This stage was crucial in confirming the necessity and contents of specialised upskilling programmes based on the strengths and skill gaps that had been identified. This step was justified by the idea that the upskilling

contents may be tailored to better match the company's skill enhancement needs by using the reports as a compass.

Fourth, following the analysis of the reports, a thorough review and debate should focus on the development of upskilling and training programmes (Step 4). This stage was confirmed as the upskilling programmes should be customised to the needs of the employees to effectively address any skill deficiencies. This step was justified by the need to make sure that the suggested programmes were tactically created to optimise resources and successfully develop staff competencies.

Fifth, this step was confirmed in the validation process emphasising the value of short learning modules for ongoing and flexible learning. The objective of this phase is to underscore the significance of these modules in fostering continuous skill development that is consistent with the organisational culture. The idea behind this is to emphasise how important it is to have learning materials that are simple to consume and fit in with the hectic schedules of employees.

Sixth, the validation phase confirmed the crucial step to inspire staff members to upskill (Step 6). The need of encouraging a culture of ongoing innovation and growth inside the organisation was highlighted in this conversation. The idea is to emphasise how important it is for employees to be motivated in order for the suggested framework to be implemented successfully.

Summing up, Table 5 illustrated the opinions within the company in relation to the proposed steps for the employee upskilling approach. Stakeholders also emphasized the need for an enhanced internal ERP system, collaborative departmental meetings for record tracking, and quarterly progress meetings to recognize employee skills. They've embraced client-based and technological assessments to gauge skill demands and have designed comprehensive training programs. The shift towards small learning modules and an internal automation system for tracking progress signifies a forward-thinking approach. Stakeholders also stressed that the case company should actively motivate employees for professional growth and plan to further collaborate with big tech companies for continuous learning frameworks, showcasing a commitment to fostering employee development and aligning it with company growth objectives.

6.3    Final Proposal

The final comments considers and incorporates the steps into the framework which serves as a roadmap for upskilling within the company. Stakeholder insights have reduced it into six essential steps. Each step is now in accordance with the strategic requirements of the company's projects and the changing IT industry needs.

The framework establishes a data-driven and inclusive collaborative foundation through the following steps: Step 1 (defining clear periodic goals tailored to project specifics); Step 2 (ensuring stakeholder involvement for comprehensive perspectives); and Step 3 (acquiring precise reports of existing skills and data). Step 4's emphasis on creating customised programmes after analysis strengthens its adaptability, while Step 5's inclusion of short learning modules promotes ongoing development and adaptability. Ultimately, 6, which highlights the critical role that motivation plays in upskilling, not only encourages personal aspirations but also fosters an innovative and ever-learning organisational culture.

This updated framework—which was informed by thoughtful feedback—aims to align employee development with business objectives, resulting in a workforce that is empowered, competitive, and capable of navigating the ever-changing IT sector. The final proposal for the framework is shin in Figure 15 below.
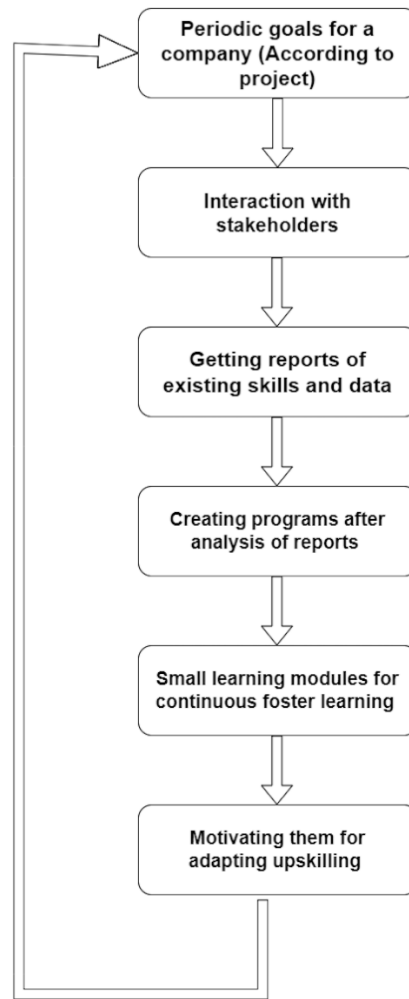
Figure 15. Final Proposal: A Framework for Upskilling and Training for digital roles for the case company.

This proposed framework for employee upskilling for the case company working within the IT sector embodies a streamlined approach, comprising six strategic steps that align with the evolving needs of Zplus Solution company.

Step 1: Periodic Goals for Company Projects

Tailored periodic goals serve as navigational markers guiding the upskilling journey. They act as pivotal benchmarks, aligning employee learning trajectories with project-specific requirements. By setting clear objectives, employees gain directed paths for skill development, ensuring their competencies evolve in sync with the dynamic demands of ongoing and upcoming projects.

Step 2: Interaction with Stakeholders

Involving stakeholders in upskilling programs is integral for comprehensive training aligned with project necessities. Their engagement ensures diverse perspectives, program success support, and tailored training plans that resonate with both company objectives and employee aspirations.

Step 3: Gathering Reports of Existing Skills and Data

Acquiring comprehensive insights into employees' current competencies through stakeholder reports is paramount. These reports serve as guiding compasses, highlighting skill gaps and strengths, thereby enhancing training efficacy and ensuring employee capabilities adapt to the evolving IT industry needs.

Step 4: Creating Programs Based on Report Analysis

Developing customized upskilling programs based on thorough skill reports allows targeted skill enhancement. This approach maximizes resource utilization, addresses specific skill deficiencies, and aligns training modules with employee needs, ensuring efficient skill growth.

Step 5: Small Learning Modules for Continuous Improvement

Deploying bite-sized, adaptable learning modules fosters a culture of continual learning amidst busy schedules. These modules facilitate continuous skill development, enabling employees to swiftly acquire and apply new skills in the rapidly evolving tech landscape.

Step 6: Motivating Employees for Upskilling

Fostering a culture of continual growth and relevance in the IT sector is pivotal. Encouraging employees to embrace upskilling boosts confidence, enhances employability, and cultivates an engaged workforce invested in individual and corporate advancement.

This proposed framework underscores a strategic approach to upskilling, poised to empower Zplus Solution company's workforce, ensure adaptability to industry shifts, and

foster a culture of continuous learning and growth within the dynamic realm of IT. This framework is designed to address the company's needs for structured and effective upskilling programs while considering the evolving demands of the IT industry and the aspirations of the workforce.

Summing up the validation part, the stakeholders agreed that this framework was created by a rigorous process of analysis, cooperation, and development, and it fits in well with the business's operating paradigm. The framework was validated thorough inspection and review from significant stakeholders as part of its development which did not find any major modifications or comments needed, which is evidence of how well it fits in with the company's goals, values, and aspirations. The company's approval is indicative of both its appropriateness and alignment with their goals.

6.4    Recommendations

Based on in-depth discussions with Zplus Solution Company stakeholders, a framework has arisen to transform the current organization's upskilling practices. However, implementing the framework requires a series of specific and doable actions to be taken. These recommendations outline a roadmap for easy implementation towards a future of ongoing learning and improved capabilities. The steps towards implementing the proposed framework include:

First, *Engage in Stakeholder Workshops and Collaborative Sessions*, conduct interactive workshops involving key stakeholders, including project managers, team leads, HR representatives, and top-level management. These sessions should emphasize the importance of aligning upskilling initiatives with project requirements. Collaborative discussions will foster a deeper understanding of the proposed framework, garner stakeholder buy-in, and ensure that diverse perspectives contribute to the success of the upskilling programs.

Second, *Establish a Robust Reporting Mechanism,* develop and implement a structured system for collecting and analyzing employee skills data. Collaborate closely with stakeholders to streamline the process of gathering reports on existing skills and competencies. This step is vital to accurately identify skill gaps and strengths, enabling

tailored upskilling initiatives that effectively address the specific needs of individuals and project teams.

Third, *Pilot Test and Refinement of Upskilling Programs* before a full-scale implementation, and initiate pilot programs based on the framework's recommendations. Select a sample group of employees from various departments or project teams to participate in these pilot programs. Collect feedback, assess the effectiveness of the learning modules, and refine the training programs based on the insights gained. This iterative approach will ensure that the upskilling initiatives are fine-tuned to meet the actual needs of the employees and align with project demands.

Fourth, *Continuous Evaluation and Adaptation* means implementing a process for ongoing evaluation and adaptation of the upskilling programs. It includes establishing regular review meetings with stakeholders to assess the impact of the training modules on employee skill development and project outcomes. This continuous feedback loop will allow for necessary adjustments, ensuring the agility of the upskilling framework to adapt to evolving industry trends and changing project requirements.

Fifth, *Create an Upskilling Culture Through Recognition and Rewards,* foster a culture that values continuous learning and upskilling by implementing a recognition and reward system. Acknowledge and celebrate the achievements of employees who actively participate and excel in upskilling programs. This initiative will not only motivate employees but also reinforce the company's commitment to investing in their professional development.

Sixth, *Invest in Technology and Learning Resources,* allocate resources towards procuring advanced learning technologies and comprehensive resources that support the delivery of small learning modules. Invest in user-friendly platforms that facilitate easy access to learning materials, enabling employees to engage in continuous learning at their convenience.

These recommendations aim to establish a proactive approach toward implementing the proposed upskilling framework. By engaging stakeholders, refining programs, and fostering a culture of continuous learning, the company can effectively align its workforce's skills with project demands, ensuring a competitive edge in the dynamic IT

industry. Regular evaluation and adaptation will be crucial in maintaining the relevance and effectiveness of the upskilling initiatives over time.

# 7 Conclusion

The key components of the suggested upskilling framework are briefly summarised in Conclusion.

## 7.1 Executive Summary

As a result of the industry's unparalleled rate of technological evolution, Small and Medium Enterprises (SMEs) in IT sector must deal with a challenging requirement for ongoing staff training and upskilling in digital competencies. This challenge for SMEs implies providing their staff with modernised skills to stay competitive in the rapidly changing digital landscape. Recent studies and industry reports highlight how these businesses are becoming more conscious of how important upskilling is to promoting innovation, increasing productivity, and maintaining growth. This thesis focused as follows.

First, the thesis discussed a wide range of topics related to industry best practices and the body of information that is currently accessible about employee upskilling in the IT industry. The conceptual framework was shaped by a number of important practices and latest theories in this field. First and foremost, the company's project-specific goals were noteworthy as a crucial point that should match the upskilling trajectory with the changing demands of current and future projects. Furthermore, the significance of stakeholder involvement emerged as an essential procedure, stressing cooperative exchanges to guarantee that upskilling programmes correspond with project requirements. The foundation for customised upskilling programmes, which concentrated on the skill gap analysis and building individualised learning paths, was established by obtaining reports on current skills and competencies from stakeholders. Additionally, essential practices included the strategic formulation of upskilling programmes following an examination of current skills reports and the production of short learning modules for continuous learning. The last factor that was found to be crucial was encouraging staff members to upskill. This promoted an innovative and ever-growing culture within the company and helped to form the final design of the suggested framework.

Second, the current state analysis of current upskilling and training practices in the case organisation showed a wide range of obstacles in developing the workforce that would

be proficient in digital technology. Moreover, several obstacles make it difficult to carry out thorough training programmes smoothly. The obstacles include the restraints like scarce resources, particularly financial limitations, and labour-intensive training methods. These obstacles were found to provide the major obstacles to the implementation of effective upskilling programmes in the case organisation. Furthermore, because digital skills are constantly evolving, training methods also need to change, which makes the problem of upskilling much more severe.

Third, based on both the above inputs, the Zplus Solution company suggested own approach for employee upskilling focused on six crucial elements. The proposed approach includes: setting regular project objectives (Step 1) and matching worker learning paths to project-specific checkpoints. After that, engaging with stakeholders (Step 2) to ensure a variety of viewpoints and backing for customised training programmes. Stakeholder reports on current competencies (Step 3) should help identify areas of strength and weakness in skills, directing targeted training initiatives. Customised upskilling programmes (Step 4) should be painstakingly created using these reports to solve skill gaps and match training courses with employee requirements. Furthermore, the framework places a strong emphasis on the use of small, flexible learning modules (Step 5) to support continuous and flexible learning. Finally, it emphasises the importance of creating a culture of motivation (Step 6) in order to support ongoing development and relevance in the ever-changing IT environment. This all-encompassing approach seeks to link worker skill sets with market demands, promoting competency and adaptability while guaranteeing consistency with business goals and ongoing initiatives.

The initial framework was validated with the key stakeholders from the case organisation, and its final version makes the outcome of this thesis. After implementation (which is outside the scope of this Thesis), the case company should have the staff with the digital skills and management of projects expertise improved and better suited to the quickly changing environment of a project-based IT company in the digital age.

The suggested framework for employee upskilling went through rigorous validation and testing phases within the Zplus Solution. Changes were made in response to stakeholder comments and preliminary results. After extensive review and improvement, the idea was approved for implementation in the case company. The validation demonstrated the fit with the needs of the case compnay and alignment with its business objectives. By

encouraging a culture of continuous learning, the company has the potential to provide employees with the skills they need to meet the changing demands of the IT projects in the case company.

## 7.2 Thesis Evaluation

This thesis embarked on an exploration of strategies and methodologies aimed at enhancing employee skills within the digital landscape of a small to medium-sized enterprise (SME) in the Information Technology sector. The thesis set out to investigate various facets of employee training and upskilling within the context of a rapidly evolving digital environment.

With the objective to improve employee training and upskilling within the case company, which is a Small and Medium-sized Enterprise (SME) operating in the dynamic landscape of Information Technology (IT), the thesis aimed to suggest practical recommendations how to approach upskilling and training in the case company. The goal was to address the pressing need for ongoing education and skill development that is especially suited for digital roles in the case organisation.

This problem is important because it directly affects the competitive advantage and sustainability of this SME. In addition to giving staff members the necessary digital skills, efficient training and upskilling programmes enable the case company to successfully use new technology. Thus, in light of the critical need for ongoing employee upskilling in the context of digital jobs within the IT industry, this thesis seeks to provide insights and recommendations that are especially suited to satisfy that need.

The thesis examined the current employee training paradigms and upskilling frameworks in the case company thorough the current state analysis (CSA). The examination revealed inherent constraints and pinpointed crucial flaws in the company's current upskilling practices. Important revelations from the CSA underscored the pressing need for customised and flexible upskilling plans to match worker skill sets to the ever-changing demands of the digital environment.

The thesis also examined best practices from well-known upskilling frameworks, drawing on insights from available knowledge and best practices. Combining these, the results

was the initial proposal for the upskilling framework, a fusion of sector-specific knowledge and results obtained from the CSA. It made the foundation for own approach to staff upskilling, with the goal of filling in skill shortages and coordinating training materials with the organization's digital goals. The approach came to be as a result of a synergistic blending of industry benchmarks, empirical data, and co-creation with the stakeholders especially aimed at digital roles in the case compony.

The thesis effectively addressed the initial objective by conducting analysis of training and upskilling programs for digital roles within an SME setting. It examined existing literature and industry practices for enhancing the digital skill set of employees. Through a systematic approach, the thesis investigated the importance of continuous training programs, the identification of skill gaps, and the design of role-specific upskilling initiatives to meet the demands of the IT sector.

However, upon critical evaluation, certain areas for improvement emerge. The thesis might have benefitted from a wider and better documented data collection, with more nuanced exploration of the specific challenges faced by the case company in implementing training and upskilling initiatives for digital roles. A deeper analysis of resource constraints, budget limitations, and organizational barriers within the case company context could have added valuable insights.

Moreover, in the available knowledge and best practice section, the thesis could have offered a more focused examination of the most effective and innovative training methodologies tailored to SMEs. Providing detailed case studies or real-world examples of successful training implementations within similar SME IT environments could have enriched the depth and practical applicability of the research.

Furthermore, the thesis could have expanded its investigation to the emerging technologies like AI-driven learning platforms or immersive training simulations to facilitate more engaging and effective digital skill development. Exploring the feasibility and benefits of such cutting-edge tools within the SME's resource constraints could have added a forward-looking dimension to the study.

In summary, while the thesis successfully addressed the primary objective of exploring employee training and upskilling within the case company, it could have further delved

into its unique challenges, provided more practical examples, and explored innovative training methodologies tailored to the specific context.

## 7.3   Closing Words

This study explored the crucial area of strengthening workforce capacities for the digital era in the context of employee training and upskilling for digital positions inside one small to medium-sized firm (SME) in the IT industry. The study employed a variety of methods, conducted a literature review, and gathered perspectives from stakeholders to examine the importance of ongoing skill development in the case company on this thesis.

The conclusions drawn from this investigation highlight how crucial employee training and upskilling are to adapt, develop, and maintain competitiveness in the fast-paced IT industry. The results highlight the necessity of taking a proactive approach to talent development in order to match employee skill sets with the growing requirements of digital roles.

As we approach to the end of this study, it is clear that technological developments alone won't suffice on the path to digital transformation; a deliberate effort must also be made to develop and empower the workforce. The case company must adopt a culture of ongoing learning in order to create an atmosphere where all the staff members are inspired and prepared to adjust to the ever evolving technology world.

Finally, this study provides evidence of the transformational impact that staff training and upskilling may have on stepping into the digital space. The advancement of technological expertise and innovation in the IT sector is closely connected to the ongoing cultivation of its labour force. May the knowledge gained here provide as a springboard for the case company, pointing it in the direction of a workforce that is knowledgeable, flexible, and empowered.

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**Appendix 1.**

**Interview Questionnaire Used in the Current State Analysis**

These questions were asked from all the interviewees, ranging from CTO, Tech Lead and to Project manager level. They were asked for their responses and they entered them into the document shown in Appendix 2.

**<u>Interview Record Sheet (Sample Format)</u>**

| Interviewee | |
|---|---|
| **Role in the process:** | |
| **Topics** | General / Process/Facilities/Improvements |

1. Is the current technology roadmap aligned with the long-term goals and objectives of the organization?.

2. Are technology-related processes smoothly integrated and consistently applied across different departments for better transparency?

3. Do the current technological facilities and resources meet the evolving needs of the organization's digital projects and initiatives, and are there plans for enhancement?

4. Has there been recent feedback from teams regarding technological enhancements or improvements at the organizational level, with plans for a monthly feedback portal?

5. Is there a systematic approach for evaluating and adopting new technologies to enhance project efficiency and outcomes, even though record maintenance is currently manual?

6. Is there a well-defined process for assessing the technical skills of the workforce and implementing targeted upskilling initiatives, even if it's not organization-wide?

7. Are investments regularly made to ensure that technological tools and infrastructure align with the latest industry standards and requirements?

8. Has there been a recent review of organizational-level technological tools and methodologies for potential enhancements or updates based on project needs?

9.  Is there effective communication and collaboration between the technical team and other departments to align technology initiatives with overall organizational goals, despite discussions being limited to the technical team?

10. Is there a structured feedback mechanism in place for teams to provide insights on technological workflows and processes at the organizational level?

**Appendix 2.**

**Questionnaire and Answers in the Current State Analysis.**

<u>**Interview Record Sheet 1**</u>

| Interviewee | Higher Authority (CEO) |
|---|---|
| **Role in the process:** | Manage the company income , take care about need of the employee and find the business for the company |
| **Topics** | General / Process/Facilities/Improvements |

1. Is there a clear vision and strategy in place for the overall direction of digital projects within the organization? **Yes**

2. Are project management processes standardized and consistently applied across various teams within the organization? **Yes , but need to more smooth for better transparency**

3. Do the current facilities and resources adequately support the organization's overall project portfolio? **Yes**

4. Has there been recent feedback or suggestions from teams regarding process enhancements or improvements at the organizational level? **Yes , but planning to do that monthly for better understanding of requirement.**

5. Is there a well-defined structure for evaluating and prioritizing digital projects based on strategic goals and objectives? **No , right now evaluation done by manually**

6. Is there a comprehensive and standardized approach for skills assessment and upskilling initiatives across the organization? **No, Based on the project requirement**

7. Are investments regularly made to ensure that technological tools and infrastructure meet the evolving needs of projects? **Yes as per the suggestion of CTO**

8. Has there been a recent review of organizational-level management tools and methodologies for potential enhancements or updates? **Yes , but done manually only.**

9. Is there effective communication and alignment between organizational goals and the skills development initiatives for digital roles? **No**

10. Is there a structured feedback mechanism in place for teams to provide insights on organizational-level workflows and processes? **No , Review got form the Team manager , Tech Lead , Project manager.**

**Summary of Key Concerning Points from the Interview**

There is a clear vision and strategy for digital projects, and project management processes are standardized but require improvement for enhanced transparency. Facilities and resources adequately support the overall project portfolio, with regular feedback from teams for organizational improvements planned on a monthly basis. However, there's a need for a well-defined structure for project evaluation. Skills assessment and upskilling are project-specific, and investments align with the CTO's suggestions. While organizational-level tools are reviewed, the alignment between organizational goals and skills development, as well as a structured feedback mechanism, are areas requiring attention.

**Appendix 3.**

**Questionnaire and Answers in the Current State Analysis.**
<u>**Interview Record Sheet 2**</u>

| Interviewee | CTO (Chief Technical Officer) |
|---|---|
| **Role in the process:** | Take care about the technology need to company , identify technical road map for next few year. |
| **Topics** | General / Process/Facilities/Improvements |

1. Is there a comprehensive technology roadmap aligned with the organization's long-term goals and objectives? **Yes**

2. Are technology-related processes well-integrated and consistently applied across different departments within the organization? **Yes , but need to more smooth for better transparency**

3. Do the current technological facilities and resources meet the evolving needs of the organization's digital projects and initiatives? **Yes , but need to enhance**

4. Has there been recent feedback or suggestions from teams regarding technological enhancements or improvements at the organizational level? **Yes , but planning to do that monthly for better understanding of requirement and make automation feedback portal for that.**

5. Is there a systematic approach for evaluating and adopting new technologies to enhance project efficiency and outcomes? **Yes , but record maintain manually**

6. Is there a well-defined process for assessing the technical skills of the workforce and implementing targeted upskilling initiatives? **Yes but not for all only target employee**

7. Are investments regularly made to ensure that technological tools and infrastructure align with the latest industry standards and requirements? **Yes**

8. Has there been a recent review of organizational-level technological tools and methodologies for potential enhancements or updates? **Yes based on project need**

9. Is there effective communication and collaboration between the technical team and other departments to align technology initiatives with overall organizational goals? **Yes , Discussion done with only technical team not other.**

10. Is there a structured feedback mechanism in place for teams to provide insights on technological workflows and processes at the organizational level? **Yes**

**Summary of Key Concerning Points from the Interview**

There is a comprehensive technology roadmap aligning with long-term goals, though processes need smoothing for transparency. Current technological facilities meet needs but require enhancement, with ongoing monthly feedback plans. Adoption of new technologies is systematic, but record-keeping is manual. Skill assessment and upskilling are targeted, not organization-wide. Investments align with industry standards, and tools are regularly reviewed based on project needs. Communication exists within the technical team but lacks involvement with other departments. A structured feedback mechanism is in place for technological workflows at the organizational level.

**Appendix 3.**

**Questionnaire and Answers in the Current State Analysis.**
<u>Interview Record Sheet 3</u>

| Interviewee | HR |
|---|---|
| **Role in the process:** | Take care about employee training and Hiring, provide information about the professional enhancement to the employee |
| **Topics** | General / Process/Facilities/Improvements |

1. Is there an established recruitment strategy that aligns with the organization's digital talent requirements? **Yes**

2. Are onboarding processes streamlined and consistently applied to integrate new hires effectively into digital roles? **Yes**

3. Do HR policies and practices ensure a supportive and inclusive work environment for employees engaged in digital roles? **Yes**

4. Has there been recent feedback or suggestions from employees regarding HR-related enhancements or improvements at the organizational level? **Yes , but no feedback portal for that.**

5. Is there a well-defined performance appraisal system in place that evaluates digital skills and contributions effectively? **Yes , motivate them with the regular session.**

6. Is there a systematic approach for identifying skill gaps and facilitating targeted training and upskilling initiatives for digital roles? **Yes , handle by manually though tech team.**

7. Are employee benefits and perks designed to attract and retain top digital talent within the organization? **Yes , Employee need to understand that**

8. Has there been a recent review of HR tools and methodologies for potential enhancements or updates related to digital roles? **Yes**

9. Is there effective communication and collaboration between HR and other departments to address talent needs and support digital initiatives? **No , there is no direct channel is there.**

10. Is there a structured feedback mechanism in place for employees to provide insights on HR-related workflows and processes at the organizational level?
**Yes , but manual feedback mechanism is there so no transparency.**

**Summary of Key Concerning Points from the Interview**

There is an established recruitment strategy aligned with digital talent needs, and onboarding processes effectively integrate new hires into digital roles. HR policies ensure a supportive work environment, but employee feedback lacks a dedicated portal. A well-defined performance appraisal system motivates digital skills through regular sessions. While a systematic approach identifies skill gaps, communication and collaboration between HR and other departments for talent support are lacking. Employee benefits attract top digital talent, and recent reviews enhance HR tools. A structured feedback mechanism exists but is manual, limiting transparency in HR workflows.

**Appendix 4.**

**Questionnaire and Answers in the Current State Analysis.**
<u>Interview Record Sheet 4</u>

| Interviewee | Tech Lead |
|---|---|
| **Role in the process:** | Identify new technology used and market, set the path for the company to survive with the new technology |
| **Topics** | General / Process/Facilities/Improvements |

1. Do you believe there is a clear understanding of the digital roles within the company? **Yes**

2. Are specific technical skills clearly defined and aligned with the company's strategic objectives? **Yes**

3. Do team members commonly face challenges in acquiring and applying digital skills for project-based work? **Yes**

4. Do you think the current training programs effectively address the evolving technological needs of the projects undertaken by the company? **Yes**

5. Have you witnessed successful upskilling initiatives positively impacting project outcomes? **No**

6. Do you believe additional support or resources would enhance the effectiveness of employee training and upskilling efforts? **Yes**

7. Is there a defined measure of success for team members acquiring and applying new digital skills, and are specific performance indicators considered crucial? **Done through Manually**

8. Does the team culture actively encourage continuous learning, fostering an ongoing mindset of skill development among employees in digital roles? **Yes**

9. Have you observed specific areas where employees need additional training or upskilling during your interactions with them? **Based on the current market-based requirement**

10. From a leadership standpoint, do you envision the future of employee training and upskilling within the company, and are there specific strategies you would

recommend for further improvement? **Automation are need to track all the record**

**Summary of Key Concerning Points from the Interview**

Team members face challenges in acquiring digital skills, but the current training programs effectively address evolving technological needs. While the successful upskilling impact is not always witnessed, a belief exists in the potential positive outcome. Additional support/resources are considered beneficial, and success measurement is done manually. The team culture encourages continuous learning, and leadership envisions the future with a recommendation for automation to track all records, enhancing training and upskilling initiatives.

**Appendix 5.**

**Questionnaire and Answers in the Current State Analysis.**
<u>Interview Record Sheet 5</u>

| Interviewee | Project Manager |
|---|---|
| **Role in the process:** | Set goal of the project completion, take care about the resources need for the project |
| **Topics** | General / Process/Facilities/Improvements |

1. Is there a clearly defined project scope and objectives for ongoing digital projects within the company?? **Yes**

2. Are project timelines and milestones regularly communicated and understood by the project team? **Partially Yes**

3. Do the current facilities and resources adequately support the requirements of digital projects? **Yes but more scope is needed**

4. Has there been recent feedback or suggestions from project teams regarding process enhancements? **Nope**

5. Is there a standardized method for assessing and assigning digital roles within project teams? Assess them manually based on project to project.

6. Are project risks regularly identified, assessed, and addressed in a systematic manner? **Yes but not having any past one year record.**

7. Is there accessibility to updated and relevant technological tools and infrastructure for project needs? **Yes**

8. Has there been a recent review of project management tools and methodologies for potential enhancements? **Yes** but not having concrete mechanism for that.

9. Is there a well-established communication channel between project managers and team members for addressing project-related concerns? **Yes through Team Manager they will communicate**

10. Is there a structured feedback mechanism in place for project managers to gather insights from team members after project completion? **Yes**

**Summary of Key Concerning Points from the Interview**

The current facilities support digital projects, but there's a recognized need for additional scope. While there's no recent feedback on process enhancements, digital roles are assessed manually. Project risks are systematically addressed, but there's no record for the past year. Access to updated tools exists, yet there's no concrete mechanism for reviewing project management tools. Communication channels exist through Team Managers, and a structured feedback mechanism is in place for project managers to gather insights post-project.

**Appendix 6.**

**Questionnaire and Answers in the Current State Analysis.**
<u>Interview Record Sheet 6</u>

| Interviewee | Team manager |
|---|---|
| **Role in the process:** | Identify proper team for project, make sure teams should be well technical skills to fullfill current requirement |
| **Topics** | General / Process/Facilities/Improvements |

1. Is there a clearly communicated and understood team structure for ongoing project within your purview? **Yes**

2. Are project workflows and processes well-defined and consistently followed by your team? **Partially Yes, Some candidate need to update their skills in middle of the project**

3. Do the current facilities and resources adequately support the requirements of digital projects? **Yes but more scope is needed**

4. Do the current facilities and resources adequately meet the needs of your team for projects? **Yes**

5. Have team members recently provided feedback or suggestions for process enhancements or improvements? **Yes , Monthly we have meeting to take feedback**

6. Is there a standardized approach for assessing and assigning tasks and responsibilities within your team? **Yes but due to staff movement it's change every month or quarterly**

7. Are project timelines and milestones effectively communicated and adhered to by your team? **Yes**

8. Do team members have access to the necessary technological tools and infrastructure for their project tasks? **Yes but some of the tools need to be purchase so have to wait for approval.**

9. Has there been a recent review of team management tools and methodologies for potential enhancements or updates? **Yes**

10. Is there a well-established communication channel between team members for addressing project-related concerns? **Yes**

**Summary of Key Concerning Points from the Interview**

Facilities support digital projects, but there's recognition for additional scope. Regular team feedback sessions occur, ensuring ongoing process enhancements. While a standardized task approach exists, it may undergo changes due to staff movements. Project timelines are effectively communicated and adhered to. Team members have access to necessary tools, pending some purchases. Recent reviews of team management tools have taken place, and there's a well-established communication channel for addressing project-related concerns.